

**Literacies, new technologies and
young people: Negotiating the
interface in secondary school**

Scott Bulfin, BA/BEd (Hons)
Faculty of Education, Monash University

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Abstract

This study investigated how young people aged 15-16 use new media technologies in school. The study's main aim was to provide a fine-grained account of the participants' engagement with new technologies and to consider the implications for language and literacy learning. In particular, the study examined the participants' sanctioned and unsanctioned use of literacy and new technologies and explored how these are negotiated.

Negotiation, a key concept in the study, is defined as a process of navigating and maneuvering within and through a complex network of discourses, relationships and competing interests. Rather than relying on the limited and limiting argument about a home-school mismatch between industrial era schools and the 'digital natives' who supposedly populate them, the study explores the connections and the disconnections, between literacies and new technologies, across school and home domains. The study draws on theoretical perspectives offered by the New Literacy Studies and develops a critical-historical perspective on literacy and new technologies, seeing them as negotiated practices rather than as technical processes.

The investigation employed a multiple case-study design with an ethnographic research orientation. Participants were recruited from Year 10 English classes across five schools representing a range of cultural and economic backgrounds from three education sectors (state, Catholic and independent). Data were generated through observations, interviews, online communications and the collection of documents and artefacts. In total, 24 cases were conducted. Analysis involved coding transcripts and fieldnotes for literacy events, activities and practices and examining these with discourse analysis techniques.

The findings suggest that the relationship between school-authorised technology use and students' out-of-school use is not a simple mismatch. While most participants experienced a mix of frustration, apathy and ambivalence towards the use of new technologies in school, there was little evidence of wholesale disaffection. Indeed, the findings showed evidence of productive engagement. Some of the participants created opportunities within the official school curriculum

for new technology uses which connected to their everyday practices.

Significantly, the study found evidence of participants' tactical use of new technologies: their digital literacy underlife. The participants employed these practices of negotiation in the cracks and fissures of the official curriculum to playfully undermine, satirise and make school space more liveable. These underlife practices allowed the participants to 'blend', 'mix' and 'remediate' school and out-of-school activities, using them to negotiate alternative spaces, identities and relationships within school environments.

These empirical findings about literacies and new technologies as negotiated practices suggest the need to reexamine the school-home binary: to see literacy as *multiply* situated and stretched across domains of practice in complex ways. Young people's digital literacy underlife is too easily dismissed as unworthy of critical attention in schools. However, the study suggests that such practices provide opportunities for young people to exercise agency in creating alternative curriculum spaces to support productive meaning-making and identity work. Further, the thesis reexamines the idea of 'negotiating the curriculum' by exploring how these findings might inform the theorising and design of English/literacy curriculum so that it is better able to offer alternative forms of literate identity and practice.

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Declaration

This thesis contains no material which has been accepted for the award of any other degree or diploma in any university or other institution and to the best of my knowledge contains no material previously published or written by another person, except where due reference is made in the text of the thesis.

Scott Bulfin

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1

Introduction

1.1 In the beginning ...

Early in the 2004 school year I wanted to try something different with the twenty-two 15-16 year olds in my mainstream Year 10 English class. I decided to devote several lessons each week to exploring online writing. I had discovered weblogs the year before while searching for teaching resources online. Intrigued by an example of a teacher using blogs with his students, I set up my own and began experimenting: writing, customising and redesigning. This was not too difficult given the rapid development of free, easy-to-use blogging software. At the time, the education blogging community was still in its infancy and I felt as if I were exploring a new frontier. Most of my teacher colleagues rarely used their education department-supplied laptops, let alone any new technologies¹ in their classes. Several still required assistance from students to operate a DVD player. As I became more familiar with the software, the blogging community and the types of literacy practices encouraged within it, I recognised that the medium offered potential for opening student writing to a new audience, perhaps giving students a sense of authenticity in their writing—something

¹ The term 'new technologies' is used in this thesis to describe electronic information and communication devices such as: computers, the internet, mobile phones, computer game consoles etc. 'Digital technologies' is used in the same way, interchangeably. These terms, while general, avoid the connotations associated with acronyms such as ICT (information and communication technologies) that are commonly used in schools. 'New media', while closely related to my use of 'new technologies', is too broad, as it denotes a range of complex interactions between mode and media (cf Manovich 2001).

that I had always tried to do as a teacher, but how many letters to the editor can students write?

So I developed a class blog called *blog-about-blogs* where I posted activities and links for students (<http://blogaboutblogs.blogspot.com>). Students set up their own blogs where they posted their work. The class blog provided links to each student's blog and I encouraged discussion and debate about the work. I had hopes of creating an online community where students would be writing and commenting on others' blogs and seeing the possibilities of the medium. Rather than assess everything the students did, I let their confidence in the new medium develop with little intervention. At least that was the plan. I had hoped students would welcome the opportunity and engage with it as a way of making connections between their wired lives and the unwired world of school. While the term digital native had not yet been canonised, epithets such as screenagers and cyberkids were already in use amongst educational technologists and popular writers.

But none of this happened in 'our' Year 10 blogging experiment. In fact, most students seemed as apathetic and uninterested as they might have been had I inflicted two periods a week of grammar exercises. When I first introduced the idea that we were going to blog our work, I received sideways glances and here-we-go-again sighs. While most had a go, learned how to get around their blogs and did the required work, there was little enthusiasm. Despite my belief that the activity might help connect to students' out-of-school interests, to many it was just another school task. I was also surprised that some students were unfamiliar with basic 'operational' (Lankshear and Snyder 2000) activities with computers. These problems may have been connected with my framing of the unit or the challenges we regularly had with new technologies at school—a slow network, internet blocks, forgotten passwords—but there also seemed to be something more at work.

The mixed success of the unit left me pondering assumptions I had made about young people's interest in new technologies and their supposedly natural abilities with a variety of 'new literacies' (Lankshear and Knobel 2006). Where I had assumed they would all enjoy and engage with online writing, most had little interest. Where I thought that bringing out-of-school literacies into the classroom would provide an alternative form of engagement with writing, students viewed my attempts as framed within a schooled 'design sensibility' (Bigum 2002). Despite my attempts not to

replicate offline classroom practices, some students still saw the blogging unit as largely unconnected to their everyday experience of new technologies.

This insight was heightened during a school open night later in the year. I invited some members of the class to come along and sit in the computer lab and work on their blogs so that parents and potential students might see the kinds of ‘cutting edge’ work we were doing in English. I stuck a big poster on the computer lab door which read ‘digital literacies lab’ and gave open-night visitors a spiel about the importance of ‘incorporating’ technology into classroom work and how much this idea resonated with ‘digital age’ students—most parents nodded knowingly. As the evening wore on, I found my claims increasingly unconvincing while the students I had invited to help were more interested in swapping strategies about new computer games than working on their blogs.

What is the relevance of this story? In part, it provides a personal perspective on the study. It also explains some of the events that led me to doctoral study. This professional learning experience challenged me to think more critically about the place of new technologies in my teaching, in subject English and, more broadly, in schools and education. To do something productive about the unease which had developed as a result of the online writing unit, at the end of the year I applied for the position of School ICT Coordinator. Despite ambivalence about my own recent experiences, I remained positive about the possibilities that new technologies might offer. At the interview for the job I talked about the importance of developing ‘ICT pedagogies’ rather than persisting with an exclusive focus on resources. I criticised the school policy for its narrow view, arguing that the time had come to move beyond hardware to how the technologies might be used. With hindsight, I now see these as my attempts to understand more about the young people in my classes and what they were actually doing with new technologies across the various domains of their lives.

Some weeks after I was given the job, I had lunch with a former lecturer who invited me to work on a recently awarded Australian Research Council (ARC) Discovery Project as a PhD student. The project *Being digital in school, home and community*, promised the chance to explore these issues in ways not open to me as a classroom teacher. I accepted the offer. Despite the move out of the secondary classroom, I have tried to keep a grounded perspective on the work in the study. In the next section, I provide

another view of young people and new technologies and sketch some of the contextual background to the study.

1.2 Literacy and technology in changing times

It has become *de rigueur* to make grandiose claims about the radical nature of contemporary times. Over the last 25 to 30 years, societies have supposedly become more global and fluid (Bauman 1998); the relative certainties of the past have fragmented and become more difficult to understand and predict. The 'old capitalism' of traditional industrial economies has become the 'fast' or 'new' capitalism of 'post-industrial information societies' and, as the discourse claims, fundamental change has followed, both in the developed and the developing world (see for example Castells 2000, 2001; Drucker 1994; Fukuyama 2000; Giddens 2002; Rifkin 1995). Social, cultural and political changes have accompanied this economic restructuring so that many individuals and groups, in developed countries at least, are said to experience the effects of global and local changes: risk, heterogeneity, social and economic inequality, among many other challenges (eg Appadurai 1996; Beck 1992; Beck, Giddens and Lash 1994).

Central to these 'ubiquitous' changes is the proliferation of new media and communications technologies and the increasing salience of the visual (Jewitt 2008; Kress 2003). While considerable variation remains across and within countries and regions (ABS 2007; ACMA 2007; OECD 2005), over the last decade new communications technologies have indeed become more common in 'modern' homes and workplaces, contributing to a growing sense of change in everyday life as well as an increase in global flows of information, images, media, commerce and people (Appadurai 1996; Castells 2001). For many in developed countries, these changes are now more-or-less integral to daily life, work and relationships (Bakardjieva 2005; Hutchby and Moran-Ellis 2001; Silverstone and Hirsch 1994). Life is increasingly mediated by the new digital technologies (Robins and Webster 1999; Turkle 1995; Wellman and Haythornthwaite 2002). These developments—a 'high-tech global world' and 'the rise of the network society' (Castells 1996)—also mean 'new' avenues for engagement and disengagement, new opportunities and new challenges (eg Bauman 2001; Loader 1998; Zuboff 1988).

Although the claims of this 'global-change' discourse are perhaps exaggerated, different economic, social and technological environments do pose significant challenges for communication, literacy and identity in a 'new media age' (Buckingham 2008a; Jenkins, Purushotma, Clinton, Weigal and Robison 2006; Jewitt 2005; Kress 2003; Lam 2006). These changed environments—characterised by the dominance of the visual and of the screen—challenge traditional ideas about what it means to be literate. In such contexts it has become increasingly difficult for educators to uphold notions of reading and writing located in print-based, monolingual paradigms (cf Carrington and Marsh 2005). Taking literacy beyond a basic, autonomous skill (Street 1995) has meant grappling with new questions: how are all young people to participate in these altered forms of social life and in changed economies and political environments? How might concepts and activities such as self, family, home, work and education be reimagined within changed communication conditions? These questions in turn pose challenges for education and formal schooling (cf Apple, Kenway and Singh 2005; Burbules and Torres 2000; Dolby, Dimitriadis and Willis 2004): What are schools for and how might they respond to contemporary globalisation? Schools, of course, have always played an important, but not unproblematic, role in preparing young people for different futures but in contemporary times there are new and demanding challenges.

Gunther Kress (2002) has argued that the nature of contemporary times means that educators and young people operate in an 'era of instability', where concerns about social change are often cloaked in debate over what is taught in schools and how it is taught or, indeed, indexed in concerns over the lives of young people: how they spend their time and energies, what they wear, read, say and eat. These concerns about appropriate school curriculum and the proper behaviour of young people are common social discourses played out in the mainstream media and in the public imagination, fuelled by social commentators, politicians, academics, parent groups and other stakeholders (cf Lesko 2001; Moje 2002; Snyder 2008). Social discourses about literacy education and the use of new technologies are also deeply connected to concerns about schooling and young people. All of these discourses need to be understood together. Indeed, literacy and new technologies have special significance as lightning rods for broader social and cultural concerns in the wider community.

To take literacy, for example—while literacy is often defined narrowly as the ability to decode and encode print texts, symbolically it represents much more. In fact, it functions as 'an empty canvas where anxieties and aspirations from the popular

imagination and public morality are drawn' (Green, Hodgens and Luke 1994: 4). When literacy is used in this way it becomes slippery: literacy *per se* is difficult to discuss because it 'acts as a smokescreen for debate over larger social, cultural and economic issues' (p. 6). Furthermore, while in the public imagination illiteracy is linked to social and cultural upheaval and to economic decline, literacy is also seen as a solution to many social problems: school failure, unemployment, poverty and crime.

Social discourses about new technologies are very similar to those about literacy; both are deterministic and instrumental, ascribing power to literacy abilities or to particular technologies rather than to the social, cultural and organisational practices with which they are entwined. Within instrumental social discourses, literacy and new technologies are seen in narrow, restricted and purely technical terms (cf Feenberg 2002; Pacey 1983) (see also fig 3.1): for example, the ability to use word processing software or upload a video to YouTube. Deterministic discourses are common in schools and other institutions where computers are seen as neutral tools, objects that can be used to do things in the world, to act more or less in a neutral way. As such, they are displaced from the complex sociocultural, political and historical contexts that are integral to their development, organisation and use—and to their critical understanding. Discourses are more than ways of representation and talking about the world; they are tied to social, cultural and political ideologies and policies which have consequences for the allocation of social goods; they have real world effects for real people (Blommaert 2005; Gee 2005; Wodak and Meyer 2001).

With respect to new technologies, deterministic discourses are evident in two seemingly contradictory impulses—or in two common 'sub-discourses' (cf Koutsogiannis forthcoming): one extremely negative, the other uncritically positive. I call these discourses technology-as-catastrophe and technology-as-saviour. They represent different ways of seeing connections between the past, present and future as well as responses and reactions to contemporary times; they are ways of making sense of the broader changes noted above. Both are misguided but both are powerfully seductive. They pose a number of challenges and dilemmas to English/literacy²

² I use the label 'English/literacy' to signal an 'ambivalent curriculum field that stretches across primary and secondary schools, and which has been known by different names in those places' (Cormack 2003: 1). English/literacy teachers are those who work in this field but are not limited to those in specifically defined English/literacy classrooms. The label also signals the teaching or learning of English/literacy across the curriculum (see discussions in Green 2002 and Sawyer 2005).

teachers and to young people. Below, I discuss some of these challenges with reference to the current study.

Retreating to the past: technology-as-catastrophe

The technology-as-catastrophe discourse maintains that particular uses of new technologies, especially by young people, have very real negative effects. Technologies are seen: *to cause* internet addiction; *to create* a growing appetite among young men for violent and sexist computer games; *as responsible for* an epidemic of bullying via mobile phones and the internet; *as contributing to* language corruption through ‘texting’; and *to fuel* social isolation, teen depression and even suicide.

Such claims are frequently framed as moral panics, a common way to explain the corrupting effects of popular culture on the behaviour and deviant identities of young people. These concerns are not new. In the 1950s, Fredric Wertham in *Seduction of the innocent* (1954) attacked comic books and other forms of permissive culture. As Andrew Burn notes, ‘18th century parents worried about the corrupting influence of Romantic and Gothic fiction on their daughters. Films, rock and roll, comics and soap operas have all been blamed in their turn for successive social ills’ (Futurelab 2007: 20). From morally suspect bodgies, widgeys and greasers, to anarchist punks and skinheads, to ‘slacker’ skaters and surfers, or the violent and antisocial proclivities of hoodie gangs, graffiti artists and young male Muslim and Asian ‘extremists’—young people and their social and cultural activities are never far from tabloid television and talk-back radio. New media technologies are just the latest form of popular culture to be targeted (cf Standage 2002).

The discourse of technology-as-catastrophe is also used by the promoters of ideas such as ‘toxic childhood’ (cf Palmer 2006, 2007; Postman 1994). These writers argue that modern society has become too technologised, too busy, too sexualised, too consumer driven, too unhealthy and too individualistic. As a result, children are living toxic childhoods, addicted to computer games and television, forgotten by parents and left to their own degenerate devices. The picture is of technologies and young people out of control, rushing towards an impending soulless technological demise. Other writers argue that new technologies contribute to the speeding up of everyday life, reducing the time for thoughtful reading, reflection and deep thinking (Birkerts 1994; Postman 1993; Roszak 1994). While these issues are a concern to many parents, educators (who

are of course often parents themselves) and others who work with young people, they are rarely as simple as suggested by those who trade on the technology-as-catastrophe discourse.

In Australia, social commentators and major news media, even government ministers, regularly appeal to public fears of declining educational standards and literacy abilities (cf Cambourne 2006; Sawyer 2006; Snyder 2008), often linking these crises to young people's 'addiction' to new digital technologies and the influence of contemporary popular culture (eg Akerman 2008; Campbell 2007; Donnelly 2004, 2007; Ferrari 2006, 2007; Rolfe 2007; Slattery 2005, 2008; Topsfield 2007). More often than not, solutions to the problems of the present are to be found in the certainties of a stable past and in comforting nostalgia (cf Kress 1995). This discourse harks back to a time when (middle-class white) children knew only their backyards, the local school and streets, when they were taught proper grammar and 'the best that has been thought and said' and when teachers and academics were not Maoist ideologues working for the greater socialist revolution.

Recent remedies have included greater regulation of internet content in schools and homes, the censoring of computer games and the development of national government education and 'awareness' campaigns, including 'cybersafety' programs where 'cybersafety cops' visit schools to give warnings about the dangers of unregulated internet use (eg cybersmartkids.com.au, cybersafeworld.com and netaalert.gov.au). In addition, citing the disruptive influence on student learning, many schools and system-wide education bureaucracies ban portable music players, mobile phones and computer games unless they are used in schooled-approved ways. Absent from this discourse is any attempt to imagine the future creatively and as different from the past. The combined effect is a cacophony of misdirected claims—a distracting white-noise appealing more to fear than to hope.

Advancing to the future: technology-as-saviour

The technology-as-saviour discourse is the opposite of technology-as-catastrophe. It maintains that new technologies can revolutionise existing social, cultural and educational practices, transforming classrooms, curriculum, pedagogy and learning. Such claims are seen in the work of technology gurus and promoters (eg Papert 1993): for instance, the idea that computers allow students to 'learn anything, anywhere,

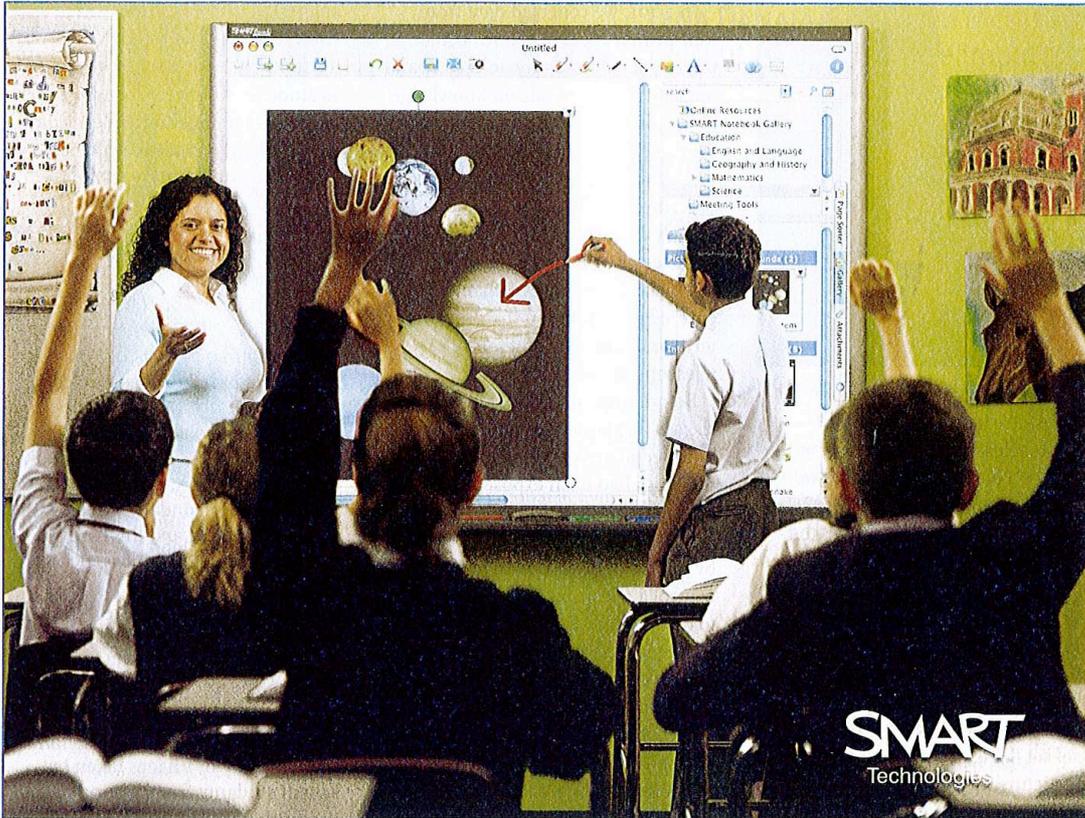
anytime' (Perelman 1993), or advertising material promoting the ideal future classroom (rows of student desks with the teacher at the front of the room using an interactive whiteboard [IWB], see fig 1.1). They are also evident in the work of educational technologists, enthusiastic teachers and school administrators (eg Means, Penuel and Padilla 2001; Richardson 2006; Schrum and Solomon 2007; Warlick 2004). The determinism of this discourse is similar to that of technology-as-catastrophe except that the former looks to the past, the latter to the future.

Since the early 1980s, social discourses around the information and communications 'revolution' have become more widespread in policy within Australia, the UK and the US. For governments and businesses, grappling with the challenges presented by contemporary 'liquid' times (cf Bauman 2000), education is a highly charged rhetorical contact zone in which young people are trained as 'knowledge workers' for new 'knowledge economies' (DCITA 2006; Gee 2004; Gee, Hull and Lankshear 1996; Negroponte 1995). In fact, the future economic growth of the state is now explicitly linked to educational achievement in areas such as literacy, numeracy and technological ability, with the nation's hopes of continued social and economic prosperity resting on the shoulders of the next generation of 'cyberkids' (eg DEET 1991; DETYA 2000; MCEETYA 1999, 2005; Toomey 2001). The OECD Program for International Student Achievement (PISA) now tests computer skills:

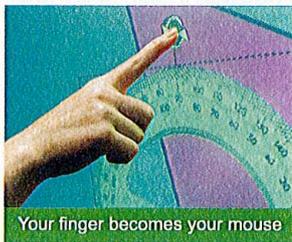
ICT is an important part of the policy agendas of OECD countries, with profound implications for education, both because ICT can facilitate new forms of learning and because it has become important for young people to master ICT in preparation for adult life. (OECD 2005: 3)

These policy shifts and the spread of the technology-as-saviour discourse has meant that governments, schools and parents have come under pressure to technologise with the aim of preparing students for the kinds of new work that future economies will require. However, much of the time this amounts to stocking schools with computer resources. Since the early 1980s, in Australia, the UK and the US, many billions have been spent on computer equipment for schools, often in a bid to 'secure' future educational success and continued national economic growth. In Australia, a new Labor Government has set itself the modest goal of a 'digital education revolution', a major part of which is a commitment to give 'all year 9 to 12 students access to a computer while at school': a \$1.2 billion promise (Dixon 2008). A key assumption here is that such a measure will contribute to helping 'prepare students for further education and training and for living and working in a digital world' (DEEWR 2008).

FIGURE 1.1 The classroom of the future?



SMART interactive teaching to classrooms



Your finger becomes your mouse



Write over any applications



Convert handwriting into text

SMART Notebook Software 9.5 features ample whiteboarding space where teachers and students can write notes in digital ink and create, interact with and save digital content from a variety of sources. Use the Gallery to allow users to arrange and store their own digital content to complement the more than 6,000 pre-loaded images, backgrounds, audio, Macromedia® Flash® and video files. Quickly and easily find images, videos and sounds by using the Gallery keyword search.

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Despite the rhetoric and huge spending, studies of the use of information and communication technologies (ICT) in schools invariably find a more complex picture of how social, cultural and technological change plays out in the lives of young people and teachers: lack of support for change, lack of resources, systemic organisational difficulties within schools and systems, increasing corporatisation, and much more (eg Cuban 2001; Lankshear and Snyder 2000; Oppenheimer 2003; Pegg, Reading and Williams 2007; Pflaum 2004; Robertson 1998; Snyder 1999). Regardless of these challenges, which are often ignored in policy documents, governments seem to prefer tinkering with machines rather than providing the resources, policy, incentives and structural change needed for school and system-wide renewal. Teachers and students are still waiting for the great leap forward.

Technology-as-saviour discourses also reimagine relationships between adults and young people. Young people are seen as closer to technologies and more in tune with technological thinking, their lives intertwined with new media. Characterisations of young people as digital natives (Prensky 2001), cyberkids (cf Holloway and Valentine 2003), the net-gen (Oblinger and Oblinger 2005) and screenagers (Rushkoff 2006) posit technological savviness as the key characteristic of a 'digital' generation. Nicholas Negroponte claims that 'being digital ... is here. It is now. It is almost genetic in its nature, in that each generation will become more digital than the preceding one' (Negroponte 1995: 231). Marc Prensky, who has popularised the idea of digital natives and digital immigrants, combines generational and migration metaphors, suggesting that people are either natives or immigrants. He claims that young people are not just doing different things but are fundamentally different to adults by virtue of their exposure to digital cultures. There is little evidence of nuance and heterogeneity in these views: young people are 'being digital'.

When both discourses—technology-as-saviour and technology-as-catastrophe—are considered together, the result is a set of dilemmas for those concerned about the education of young people in digital times:

- frequent moral panics about the negative influence of new technologies on young people's social activities and communication practices at the same time as calls from stakeholders for techno-competent school and university graduates able to live and work in a digital age

- calls for a 'back-to-basics' curriculum to solve an apparent educational standards crisis alongside moves towards the development of curriculum frameworks designed to extend beyond disciplinary boundaries and encourage 'deep knowing' in domains such as 'design, creativity and technology' (VCAA 2004)
- concern about popular culture texts (including new media), used in classrooms to 'dumb down' curriculum at the same time as a growing recognition of the salience, power and complexity of multimodal, screen-based, popular culture texts
- enthusiasm from technology promoters and early adopter teachers alongside limited support and opportunities within schools to pursue new ways of teaching with new technologies.

Both varieties of discourse play into 'neo-conservative agendas in education' (Koutsogiannis forthcoming: 3). Moral panics, invoking discourses of technology-as-catastrophe, are used to support calls for back-to-basics approaches and to justify traditional forms of authority and discipline. They are also used to demonise the 'soft' and 'permissive' approach of progressive educators. Technology-as-saviour discourses promote an uncritical and ahistoric approach to the use of new technologies in schools, where schools become willing consumers, not only of the new technologies, but also of the spurious claims made by technology promoters (cf Buckingham 2007; Koutsogiannis forthcoming). Dimitris Koutsogiannis argues that 'both discipline and the unthinking association of education with the new economy are significant facets of conservative educational policy' (forthcoming: 3; cf Apple 2001). Equally important is the influence of these discourses on the 'orientation, practices and identities of parents and children' with respect to literacy and new technologies and the crucial role they play in the framing of educational policy (Koutsogiannis forthcoming: 2). As a result, the policy governing the teaching of literacy and the use of new technologies in schools is, at the very least, resting on shaky foundations.

The major challenge of these discourses is that they position English/literacy teachers and young people in contradictory ways and obscure the differences in how young people engage with new technologies. Neither discourse provides a realistic way forward in thinking about the connections between schools and the daily lives of young people. English/literacy educators need more nuanced ways of understanding the connections between literacy and new technologies.

1.3 Seeking connections and alternatives: the study's rationale

The current 'era of instability' (Kress 2002) requires an understanding of the complex relationship between contemporary communication practices and literacy education in schools. The discourses about contemporary times discussed above also require careful scrutiny in light of grounded empirical data from research. In this study, I probe contemporary claims about the uniqueness of the radical and fundamental changes of the last few decades. The idea that current times are unique in human history is ahistoric and deterministic (cf Edgerton 2007; Marvin 1990; Smith and Marx 1994). At the same time, I hold on to the idea that educators and young people are operating in something like an 'era of instability': in environments which present challenges and dilemmas of a different order (cf Carrington and Marsh 2005; Kress 1995, 2002, 2006). Whether or not these are unique challenges—there have been other eras of instability—is probably best left for future historians to judge.

There are now many studies documenting the digital cultures in which students are engaged outside the classroom (eg Atkinson and Nixon 2005; Black 2006; Beavis 2004; Carrington 2004; Davies 2006a; Lam and Rosario-Ramos 2009; Lankshear and Knobel 2006; Marsh and Millard 2006; Thomas 2007) (see also 3.4). This work has suggested approaches to understanding contemporary literacies in out-of-school environments. However, as well as a focus on digital cultures outside schools, there is a need for closer examination of what is going on in schools and classrooms. Kress and colleagues (Kress et al 2005) note that school literacy practices especially in English/literacy classrooms have received relatively little close attention. Students' digital literacy practices in schools have received even less.

Rather than assume that not much is taking place with new technologies in schools and English/literacy classrooms, or that what is taking place is mundane and not worthy of critical attention, in this study I take seriously young people's use of new technologies in schools and the literacy and identity work performed through these uses. Discourses about a new communication order (Street 1998; Snyder 2001), new literacies and digital natives are seductive, but there is another perspective: the untold stories and experiences of young people, new technologies and unofficial school literacies. It is in this domain that the present study aims to make a contribution.

The research questions

Three questions lie at the heart of the thesis and provided the focus for the study:

1. How do young people use new technologies in schools and classrooms?
2. How do young people's activities with new technologies mediate their language and literacy learning?
3. What are the implications of young people's digital literacy practices for English/literacy curriculum in schools?

In exploring the first question, I set out to examine what young people were required to do with new technologies within the official school curriculum. I also set out to explore what young people did with new technologies regardless of school rules and policies. The second and third questions required an examination of how participants used unsanctioned technology practices to engage in a variety of meaning-making work with consequences for literacy learning.

Exploring these questions required looking beyond critiques of schools as anti-technology or resistant to technological change. It also meant examining claims about the disaffection of young people from new technology use at school. Rather than beginning from this position, the study deliberately sought to identify points of connection between schools and the increasingly technology-mediated lives of young people. The study aimed to move beyond merely endorsing the need for schools to develop greater responsiveness to the diverse cultural activities that constitute the lives of young people, to propose and examine real alternatives.

In the next section, I discuss some key concepts important to the study. The chapter then finishes with an outline of how the thesis is organised and a note about the larger research project to which this study is linked.

1.4 Some conceptual tools for investigating digital literacies

My introductory story about using online writing with a group of Year 10 students highlights a key conceptual issue in the study: the dynamic between the intentions of teachers and how these intentions are enacted in their classroom relations with young people. Douglas Barnes has noted:

When people talk about “the school curriculum” they often mean “what teachers plan in advance for their pupils to learn”. But a curriculum made only by teachers’ intentions would be an insubstantial thing from which nobody would learn much. To become meaningful a curriculum has to be enacted by pupils as well as teachers, all of whom have their private lives outside school. By “enact” I mean come together in a meaningful communication—talk, write, read books, collaborate, become angry with one another, learn what to say and do, and how to interpret what others say and do. A curriculum as soon as it becomes more than intentions is embodied in the communicative life of an institution, the talk and gestures by which pupils and teachers exchange meanings even when they quarrel or cannot agree. In this sense curriculum is a form of communication. (Barnes 1976: 14)

In this study, I explore tensions between the *intended* curriculum—what schools and teachers ask the participants to do with new technologies and the views, values and beliefs underpinning these intentions—and how these are *enacted* in the communicative life of schools. I focus on how young people respond to school activities using new technologies and their attempts to create alternative activities and practices. To see school as the embodiment of adult intentions is to miss what really goes on in and around classrooms and schools³. It would, in Barnes’ terms, make schools ‘an insubstantial thing from which nobody would learn much’ (p. 14). In this study, curriculum is conceptualised as a form of communication and a type of conversation (Applebee 1996; Bulfin 2006). This involves thinking about curriculum ‘space’ as discursively, socially, culturally and technologically made by practices-in-negotiation (see 4.4).

I use the concept of negotiation not as business-speak for securing a compromise but as a continuing process of navigating or maneuvering within and through a complex network of discourses, relationships and competing interests, all inflected with aspects of power. My aim is to explore how the concept of negotiation might be reimaged (or renegotiated) in order to offer useful ways of understanding digital literacy practices in English/literacy classrooms. In this effort, I draw inspiration from Garth Boomer’s (1982, 1988; Boomer et al 1992) work on negotiating the curriculum. For Boomer, writing before the widespread use of the internet in education, negotiating the curriculum meant developing with students a shared interest in and responsibility for curriculum. At its core, Boomer’s notion relies on teachers choosing to initiate

³ I use the phrase ‘in and around classrooms and schools’ as it avoids expressions such as ‘in- and out-of-schools’, allowing me to explore different kinds of relationships between school and home domains. It also points to the unofficial spaces ‘around’ or outside of classrooms, but still within schools. My use of ‘in and around’ is adapted from Maybin (2007) where she calls for a ‘more fluid and dynamic language of description for children’s ongoing meaning-making around texts’ (p. 528).

dialogues with students that lead to negotiated classroom cultures. While understanding how these cultures can be built is important, this study explores negotiation from a different perspective: from the 'bottom up'. My focus was on actions the students' took to negotiate curriculum.

The work of a number of other researcher/theorists has informed this study. Janet Maybin (2007), for example, shows how students engaged in literacy practices both 'over and under the desk', mediate between school-authorized activities and others not officially sanctioned in schools. Anne Haas Dyson (1997, 2003) illustrates how the young people in her studies of classroom language use employ processes of recontextualisation—borrowing and revoicing, reorganising and rearticulating—to differentiate and expand 'knowledge of symbolic systems, social practices, and the ideologically complex world' (2003: 15). Similarly, Gemma Moss (2000, 2001) describes how young people blend 'school' discourses with ways of doing literacy characteristic of other domains and sites (cf Bulfin and North 2007). These examples encouraged me to explore how the participants in this study engaged with the official school curriculum in order to recontextualise and remediate traditional school literacies, negotiating room for cultural practices outside the scope of the official curriculum.

Throughout the conduct of the study, Mikhail Bakhtin's dialogic theory (1981, 1986) was also useful, allowing me to develop a more nuanced understanding of negotiation via his theoretical account of language, discourse and identity. He notes:

The word in language is always half someone else's. It becomes "one's own" only when the speaker populates it with his own intention, his own accent, when he appropriates the word, adapting it to his own semantic and expressive intention. Prior to this moment of appropriation, the word does not exist in a neutral and impersonal language (it is not, after all, out of a dictionary, that the speaker gets their words!), but rather it exists in other peoples' mouths, in other peoples' concrete contexts, serving other people's intentions: it is from there that one must take the word, and make it one's own. (Bakhtin 1981: 293-94)

For Bakhtin, the use of language and other semiotic practices are struggles over meaning and meaning-making. These struggles take place in and through speech acts as individuals and groups dialogically negotiate particular meanings, drawing on words, texts, discourses and practices already imbued with meaning and which 'sparkle with ideology', repopulating these same words, texts, discourses and practices with new meaning and intention as different circumstances, contexts, histories and futures

present themselves. These struggles involve competition over various forms of capital in particular fields (Bourdieu 1990), or for social goods within and between particular discourses, each with its biography and history (cf Gee 2005). In the communicative life of schools, young people and their teachers continually enact these rich and varied dialogic relations. I have found the idea of dialogic negotiation helpful when considering how young people use literacies and new technologies across different domains and spaces, working with and against the intentions of teachers, adapting these to their own semantic and expressive purposes.

The process of negotiation is at the heart of this study. It has provided a conceptual base and a generative metaphor for exploring how the participants made sense of terrain mapped by terms such as literacy and new technologies in the context of their school experiences: how they maneuvered around the existing landscape of school-authorised technology practices and also created alternatives. Throughout the thesis, I develop the ideas introduced here through close attention to how the participants use new technologies within school environments, exploring tensions between the official and the unofficial, between the intended and the enacted.

1.5 Organisation of the thesis

The thesis is presented in three main parts, each with two chapters. In addition, two chapters frame the study: an introduction and a conclusion. Chapter one provides a rationale for the study and some preliminary comments on key ideas. Part one (chapters two and three) contains an analysis of theory and research relevant to the project and continues to build the study's rationale. Chapter two begins with the New Literacy Studies and examines its contribution to literacy research, both in- and out-of-schools. Chapter three develops a critical perspective on research which has examined literacy and technology, analysing work from the late 1970s through to the present. Both chapters two and three examine contemporary claims about literacy and new technologies through an historical lens and trace the increasing convergence in a number of related fields. My aim is to analyse major themes in the research rather than present an exhaustive review of the research literature.

Part two (chapters four and five) deals with study design, methodology and data analysis. Chapter four details how the study was conceptualised, devised and carried out and includes discussion about research quality and ethics. Chapter five develops a

theoretical framework for data analysis and outlines how this analysis was carried out. This chapter also introduces the research sites and participants. Part three (chapters six and seven) presents the analysis of the data. Chapter six examines official, school-authorised technology practices and the participants' varied responses to these activities, providing examples and discussion. Chapter seven examines unofficial, unsanctioned digital literacy practices: tactics employed by the participants to challenge and undermine school-authorised practices and to create spaces within schools for alternative forms of work, play and meaning-making. Chapter eight concludes the thesis and considers key themes raised in the study.

Connection to the ARC Discovery Project

The study constitutes a significant part of an ARC Discovery Project: *Being digital in school, home and community: Investigating the implications of young people's engagement with ICT for education* (2005-7). This larger project was a 'mixed method' study involving qualitative work with students and teachers in 10 Victorian secondary schools and a national survey of young people in Year 10. My PhD study comprised a 'stand alone' aspect of the larger project's qualitative work, with a focus on five of the 10 participating schools. All aspects of the current study were managed and conducted independently: the construction of the theoretical framework, methodology and design particulars, all data generation, analysis and interpretation and the final writing up of the study.

While I have been a key member of the project team—which included Professor Ilana Snyder, who was the chief investigator and my PhD supervisor, and Dr Sue North, who managed the national survey—I have also had considerable freedom to develop the PhD study in ways I felt appropriate to the overall goals of the larger project: to generate detailed accounts of young people's engagement with digital technologies across school and home and to consider the implications of this technology use for literacy education. This type of research training is not yet common in education or social science faculties in Australian universities and while there are few models for guidance, the process has been surprisingly smooth. On questions of collaboration, contribution and intellectual ownership there are two things to note. The first is that *all* research is *always* collaborative in the broadest sense of the word; researchers rely on the input, previous work, ideas, time and goodwill of others (including participants) to conduct their studies. Etienne Wenger provides a useful perspective on this point:

Our knowing—even of the most unexceptional kind—is always too big, too rich, too ancient, and too connected for us to be the source of it individually. At the same time, our knowing—even of the most elevated kind—is too engaged, too precise, too tailored, too active, and too experiential for it to be just of a generic size. The experience of knowing is no less unique, no less creative, and no less extraordinary for being one of participation. (1998: 141-2)

However, while I have participated and contributed to the larger project, and have benefited from the other members' expertise and mentoring as part of the project team, the work represented in this thesis is my own—I alone am responsible for its potential contribution as well as for its flaws. As the onus is on the researcher to provide a sense of transparency in descriptions of the various contributions made by others, my strategy is to cite a particular publication by the project team or to acknowledge intellectual debts as appropriate if no publication exists.

PART 1

THEORY AND RESEARCH

2

Social and critical perspectives on literacy

2.1 The New Literacy Studies

Understanding the present and imagining the future of any research field begins with a sense of its past. Early studies lay foundations for future research by developing useful theories, methodologies and analytical tools, all of which are refined as researchers employ them in their studies. While this study focuses on young people, literacies and new media technologies, it also takes account of earlier work in the field of literacy studies. This work developed new ways of researching and understanding how literacies are used in daily life and in schools. These new ways of understanding literacy are epitomised by the New Literacy Studies (NLS), a broad sociocultural approach to the study of language and literacy in everyday life. Researchers employing a NLS perspective view literacy as a social, cultural, political and technological phenomenon.

The NLS is a body of research produced over the past 30 years across a number of related disciplines, including: sociolinguistics, the ethnography of communication, anthropology and social and cultural psychology (eg Barton 1994; Baynham 1995; Gee 1996; Heath 1983; Hymes 1974; Scribner and Cole 1981; Street 1984). NLS research exemplifies a social and cultural approach to literacy and, in its early development during the 1970s and 80s, signalled a move beyond purely behaviourist, cognitive and

psychological accounts of literacy. Instead, NLS researchers have attempted to capture the complexity of literacy practices in contemporary societies. Rather than defining literacy as a set of static skills, taught in school and associated exclusively with books and writing, the NLS approaches literacy as a set of social and cultural practices. It emphasises the role literacy plays in people's lives, at home, at work and at school (Barton and Hamilton 1998; Pahl and Rowsell 2005; Prinsloo and Breier 1996; Street 1995).

In this chapter I discuss the development and consolidation of the NLS, showing how this work provides a theoretical foundation for the current study. To do this I use Mike Baynham's (2004) generational metaphor to group NLS research loosely according to research chronology and preoccupation (ie first and second generation research). My aim is to develop a perspective on the NLS which is useful for thinking about the literacy practices of young people as they relate to new media technologies especially within school environments. Drawing on key NLS research, I discuss theoretical frames and conceptual tools which have enabled me to construct both the 'objects' of my study and to understand how to go about investigating these objects. Disciplinary traditions are not only bodies of 'content knowledge' but are built on particular ontologies, epistemologies, methodologies and research methods, all of which are inexplicably tied to the discipline's notion of valuable and legitimate knowledge and practice. Part one of this thesis (chapters two and three) discusses work from which I have drawn knowledge of previous research and, equally significant, understanding about the nature and conduct of research in language and literacy education. The theory and research discussed in part one also inform part two (see chapters four and five) where I outline the study's design and data analysis framework and in part three (see chapters six and seven) where I present my analysis and interpretation.

Briefly, I have employed an NLS perspective because it:

- supports the examination of literacy in diverse cultural contexts, including schools
- views literacy as multiple and as part of broader social practices
- draws attention to the connectedness of social, cultural, political and technological dimensions of literacy practices and other semiotic systems
- connects literacy events (the micro) and literacy activities and practices (the mezo and macro) (see 5.2)
- highlights the relationship between discourse, identity and power (see 5.2)

- provides well theorised and ‘open textured’ (Freebody 2003) methodological approaches combining ethnography and case study (see 4.2 and 4.3).

These ideas will be explored further in this chapter and throughout the thesis.

A caveat before continuing. The development of any research field is anything but a smooth, logical evolution (cf Kuhn 1970). Understanding the present often means reordering the past to fit neat narratives; disparate events and unconnected trends are linked and the past leads seamlessly to the present. These narratives are often ‘heroic tales’ with ourselves or colleagues in lead parts (cf Swidler 2001). But tracing history and biography are never this simple (cf Mills 1978). Any categorisation of research is provisional and artificial; categories used to organise and carve up research fields inevitably overlap and exclude. Histories and future projections often say more about the present than they do about the past or the future. Intellectual work is most usefully directed at understanding the possibilities the present offers for better knowing the past and imagining the future. So it is with an eye to the provisional that I offer the discussion of research in this and the next chapter.

2.2 First generation NLS research

Early NLS research was conducted mainly by anthropologists during the 1970s and 80s in places as diverse as northwestern Africa (Finnegan 1988; Scribner and Cole 1981), Canada (Graff 1979; Scollon and Scollon 1981), the southeastern United States (Heath 1983) and Iran (Street 1984). These researchers—Harvey Graff, Brian Street, Shirley Brice Heath, Ruth Finnegan, Ron and Suzanne Scollon, among others—rather than focusing on the consequences of literacy as earlier researchers had done, began instead by asking questions about ‘the *social meaning of literacy*’ and of reading and writing:

that is, the roles these abilities play in social life; the varieties of reading and writing available for choice; the contexts for their performance; and the manner in which they are interpreted and tested, not by experts, but by ordinary people in ordinary activities. (Szwed 1981: 14, emphasis in original)

Before this time (and for some time after) much of the anthropological work on uses of reading and writing focused on the ‘nature of literacy and its consequences’ (Collins and Blot 2003: 34). There have long been claims made for a series of ‘great divides’ or fundamental differences in the social, cultural and cognitive development of human

beings (cf Goody 1977; Goody and Watt 1963; Havelock 1963; Ong 1982). These divides are often still expressed in the binaries of oral and literate cultures, or of literates and non-literates. James Collins and Richard Blot (2003) note that since post-World War II these 'fundamental differences in human cognition and human social and cultural conditions [have been] attributed ... to literacy' (p. 10). For example, 'oral cultures' were stereotyped as less advanced intellectually, socially and economically, while societies which had developed writing systems were seen as possessing higher cognitive function, having more organised institutional life and more moral and prosperous as a result of being literate societies. Walter Ong (1982) for instance read history largely as a story of progress from earlier pre-literate, oral cultures to literate and technology-rich modern cultures ('the technologising of the word'), with literacy proving to be the decisive difference in the evolutionary advancement of society.

Researchers such as Street (1984) and Finnegan (1988) developed strong critiques of this great divide theory, or 'literacy myth' (cf Graff 1979), choosing instead to investigate, not the cognitive or broad social consequences, but the social meaning of literacy in situated contexts. Researchers focused on questions such as 'what reading and writing are for, how they are conducted and how they are judged' (Collins and Blot 2003: 34-5). Instead of seeing literacy as a set of stable and discrete skills possessed by individuals and usable independently of history, culture and place, the NLS approaches literacy as a set of social and cultural practices embedded within these wider structures. In addition, because literacy is deeply historical, social and cultural, it is implicated in relationships of power. NLS researchers argue that literacy has no effects, or no predictable effects, and no meaning, outside of historical, social and cultural contexts and practices (Street 1997). This move towards the social meant NLS researchers argued for literacy to be studied in its local social, cultural, historical, economic, political and technological contexts, both in schools and out (cf Gilmore and Glatthorn 1982; Schieffelin and Gilmore 1986).

James Gee (2000) contextualises the development of the NLS within broader dissatisfaction with psychological and cognitive approaches to social phenomena such as language and literacy. The work of early NLS researchers can be seen as a response to psychologistic and decontextualised explanations of literacy and language. While many research traditions share a sense of the significance of the social, genealogically speaking, NLS research has three main contributing traditions: (1) Vygotskian and activity theory accounts of literacy (2) the ethnography of communication and (3)

critical anthropology. In the remainder of this section on first generation NLS research, I discuss in some detail examples from each to illustrate the valuable aspects drawn from each tradition.

Scribner and Cole: a practice account of literacy

Cultural-historical psychologists, Sylvia Scribner and Michael Cole's (1981) *Psychology of literacy*, produced out of their work among the Vai people of Liberia during the 1970s, is a classic early ethnography of literacy. They had gone with unresolved questions about Lev Vygotsky and Alexander Luria's work on the cognitive consequences of literacy, conducted in collectivised Soviet Central Asia during the 1930s (see Gee 1996; Luria 1976). This work had concluded that major differences existed in the abstract reasoning ability of literate and non-literate people: that literates were able to describe processes in more abstract, decontextualised ways, whereas non-literates overwhelmingly used references to their everyday experiences. Scribner and Cole challenged the basis of this conclusion arguing that it conflated literacy with formal schooling. In their own study they set about examining if the cognitive effects of literacy and schooling could be separated out and how different forms of literacy were embedded within and supported different social practices. They were able to do this because, of the Vai's three common literacies, only English was associated with Western schooling; the others—an indigenous syllabic Vai script and an Arabic literacy used for reading the Qur'an—flourished outside Western schools.

Using a range of cognitive tests, as well as surveys and detailed observation of participants (who included non-literates, those literate in either Vai script or Arabic, those literate in both and those schooled in English), Scribner and Cole generated data by testing for specific language skills rather than for vague notions of 'cognition'. This allowed them to avoid making claims about the general effects of literacy and to examine the specific skills developed by users of different literacies and scripts. Their conclusions 'help to lay to rest some misconceptions about the psychology of literacy that went unchallenged in the past from lack of empirical data' (1981: 132). They argue:

There is no evidence in these data to support the construct of a general "literacy" phenomenon. Although many writers discuss literacy and its social and psychological implications as though literacy entails the same knowledge and skills whenever people read and write, our experimental outcomes support our social analysis in demonstrating that literacies are highly differentiated. (p. 132)

Scribner and Cole found that specific language skills practised in the different literacies (Vai, Arabic and English) fostered the development of certain specialised forms of thinking; Qur'anic literacy, for example, improved performance on some memory tasks. They also concluded that these skills associated with particular literacies were not transferable in straightforward ways. In other words, 'a type of literacy enhances quite specific skills that are *practiced* in carrying out that literacy' (Gee 1996: 57, emphasis added). They also found that 'formal schooling with instruction in English increased ability to provide verbal explanation of the principles involved in performing the various tasks' (Scribner and Cole 1981: 130-1). That is, rather than performing better on tasks, those who had attended Western-style schools taught in English had a greater ability to talk about these tasks. But while some differences were observed in those who had experience of Western schooling, Scribner and Cole qualify this conclusion by referring 'only to students, recent ex-students, or those continuing in schoollike occupations' (p. 131): a case of use it or lose it. They note finally that 'our results are in direct conflict with persistent claims that "deep psychological differences" divide literate and nonliterate populations' (p. 132) and instead point to other explanations for 'general cognitive change' such as urbanisation.

Scribner and Cole's research demonstrated that literacy was not solely responsible for cognitive changes in Vai and Arabic literates and that there was little difference in the performance of these groups when compared to English literates who had been out of school for a number of years. Scribner and Cole argue that 'school fosters abilities in expository talk in contrived situations' (p. 244) or, in other words, 'school literacy was linked to performance on school related tasks and assessments' (Larson and Marsh 2005: 19). What appeared more important than the 'effect' or consequences of literacy on cognition were the 'effects' of social practices within which literacies were embedded. Practices used in the newly developing commercial activities, in traditional religious reading practices or in the Western schools all required groups to engage in different language and communicative practices, in particular locations, for particular purposes. These practices all employed different 'literacies' and had their own histories and social consequences.

This work amongst the Vai was important to the early development of the NLS because it began to formulate a *practice account of literacy* and rejected the view of literacy as purely psychological and decontextualised from social and cultural practice. This work

also drew attention to the ‘almost complete confounding of English literacy and schooling’ (p. 133) (cf Street and Street 1991).

Heath: literacy as ways with words

While Scribner and Cole worked from within cultural-historical psychology and activity theory approaches to language and literacy, Heath brought to her classic ethnography, *Ways with words* (1983), an intellectual genealogy from Hymesian sociolinguistics and ethnography of communication (Gumperz and Hymes 1972; Hymes 1974). In her work, these theoretical perspectives are brought to bear on educational challenges. During the late 1960s and early 1970s, schools in the southeastern United States, as elsewhere, were grappling with the challenges of racial desegregation and with engaging diverse groups of students who saw little value in academic learning for the work they would ultimately take up in the area’s textile mills. The middle-class teachers Heath worked with wanted ways of understanding the children in their classes. This led Heath and her students to ask about the role of community, culture and social history in the early language development of children from different communities.

Heath spent almost 10 years working in three small communities in the Piedmont Carolinas: ‘Roadville’ a white working-class neighbourhood, ‘Trackton’ a black working-class neighbourhood (both mill towns) and ‘Maintown’ an integrated middle-class community in a larger town centre. She documented the communicative practices of families in each community focusing on their uses of oral and written language in everyday life. In particular, she examined how children were socialised into particular forms of communicative practice or cultural and historical ‘ways with words’. She notes, for example, how adults in each community used questions in different ways to engage children in activities around written texts. Maintown parents used questions in ways very similar to schools—they asked for *what-explanations*, encouraging children to read for comprehension, as well as for *reason-explanations* and *affective commentaries*, ‘questions about why events occurred or why a specific action was right or wrong’ (Heath 1982a: 54). In Roadville, children were asked only what-explanations and not reason-explanations. In Trackton, things were quite different to Maintown and Roadville: children were ‘asked a preponderance of analogical questions, which call for non-specific comparisons of one item, event, or person with another: “What’s that like?”’ (p. 67). In Trackton homes, children were also asked for specific information known to the child but not the adult (eg ‘Where’d you get that from?’ ‘What do you

want?’ and ‘How come you did that?’). This differed from Maintown and Roadville where children were asked questions that adults already knew the answers to—as in school.

Mapping these questions onto those used in schools, Heath found explanations for the difficulties students from different communities were having. What-explanations were used heavily in early primary school, while more ‘difficult’ reason-explanations were common as children progressed to the upper years of primary school. This meant that mainstream children had been well practised in and prepared for literacy events typically occurring in school because school patterns of interacting around texts and with teachers matched their own primary socialisation in the home. Children from Roadville and Trackton were prepared differently which had implications for their ability to display ‘correct’ interactions with texts and teacher questions. Heath notes ‘ways of taking employed in the school may in turn build directly on the preschool development, may require substantial adaptation on the part of the children, or may even run directly counter to aspects of the community’s pattern’ (1982a: 70).

Heath argued that ‘the various approaches of these communities to acquiring, using and valuing language are the products of their history and current situation’ (Heath 1983: 10). These different ways with words and questions were not natural or biological, or determined by socio-economic difference or ethnicity, but rather were social and cultural practices bound up with identity and with power:

The different ways children learned to use language were dependent on the ways in which each community structured their families, defined the roles that community members could assume, and played out their concepts of childhood that guided child socialization ... The place of language in the cultural life of each social group is interdependent with the habits and values of behaving shared among members of that group. (p. 11)

This is a strong argument for a view of culture ‘as learned behavior and ... language habits as part of that shared learning’ (p. 11).

Heath’s contributions are many. Her study moves conceptions of language and literacy away from individual and cognitive explanations and towards views of communication practices socially, culturally and historically situated within communities and constitutive of identities. Contrary to arguments about the universal effects of literacy, This work shows how social and cultural practices shape literacy. In observing how

different ways with words played out in school success, her work has also been integral to the development of the home-school mismatch hypothesis (cf Luke 2004). Her development of the notion of the literacy event as an analytical tool is discussed in chapter five (see 5.2).

Street: literacy as ideological

Street conducted fieldwork in northeastern Iran between 1970 and 1977—the same time as Heath was in the Piedmont Carolinas. In his work, recorded in *Literacy in theory and practice* (1984), Street argues that literacy and its uses, functions and meanings must be understood as always situated or embedded within specific contexts. Reading and writing practices are always learned, performed and understood within particular sociocultural contexts and within broader social and cultural practices, which are also always ideological. Street's work shows how literacy is never neutral, or a set of simple, 'autonomous' technical skills that can be learned in a vacuum and then transposed to different contexts in a straightforward way.

In his ethnographic work he examined communication practices in a number of small fruit-growing villages around the major city of Mashad near the Iranian border with Afghanistan, in particular, the mountain village of Cheshmeh. Significantly, Street describes how literacy practices associated with various domains of village life 'enabled' participation in different economic and social activities. At the beginning of the 1970s in Cheshmeh, 'modern school learning' was on the rise but those who had received a more traditional education in the *maktabs* or religious schools 'still dominated village social life and institutions' (1984: 132). In the maktab, mullahs imparted Qur'anic learning, usually through the rote recitation of the Qur'an, 'although in some cases, as in Cheshmeh, mullahs add[ed] knowledge of commentaries and also [taught] vernacular literacy and numeracy' (p. 133). While Street notes that those schooled in the literacy and ideology of the mullahs, what he calls 'maktab literacy', were able to maintain their religious dominance in the village, maktab literacy also 'contributed in important ways to their social and commercial dominance' (p. 132). In response to the oil boom of the mid-1970s, Street documents how maktab literacy was adapted for commercial purposes by a rising class of village entrepreneurs, *tajers*. These business men—fruit traders buying from villagers and selling in the cities—had not been exposed to modern school learning but adapted and modified abilities learned

in the maktab to their commercial activities. Street calls these modified literacy practices 'commercial literacy'.

Based on his observations of the way literacy practices developed within different domains of village life (ie religious, economic, school), Street proposes the *ideological* and *autonomous models of literacy*. He argues that literacy, rather than being an autonomous and decontextualised set of skills, is always ideological because it is always tied to value-laden contexts and social practices. For Street, the adaptation of maktab literacy into commercial literacy by those who managed the fruit trade is an example of the ideological nature of literacy practices. He says of the commercial literacy:

It was rooted in village institutions, and in the social relations of "tajers" with other villagers and with city dealers on which their commercial success depended. The construction of this particular literate form was neither an individual matter nor was it a product of specific formal training. Although it emerged from "maktab" literacy, for instance, it was not a product of "maktab" pedagogy, which was directed towards a different cluster of meanings and usage. It was the development at the level of ideology, a social construction of reality embedded in collective practice in specific social situations. (p. 12)

Street argues 'that literacy not only varies with social context and with cultural norms and discourses regarding, for instance, identity, gender and belief, but that its uses and meanings are always embedded in relations of power' (Street 1997: 48). His ideological model has the following characteristics:

1. It assumes that the meaning of literacy depends upon the social institutions in which it is embedded;
2. literacy can only be known to us in forms which already have political and ideological significance and it cannot, therefore, be helpfully separated from that significance and treated as though it were an "autonomous" thing;
3. the particular practices of reading and writing that are taught in any context depend upon such aspects of social structure as stratification (such as where certain social groups may be taught only to read), and the role of educational institutions;
4. the process whereby reading and writing are learnt are what construct the meaning of it for particular practitioners;
5. we would probably more appropriately refer to "literacies" than to any single "literacy";
6. writers who tend towards this model and away from the "autonomous" model recognize as problematic the relationship between the analysis of any "autonomous," isolable qualities of literacy and the analysis of the ideological and political nature of literacy practice. (Street 1984: 8)

In contrast to this ideological model, the autonomous model views literacy as ideologically neutral, having consequences ‘irrespective, or autonomous of, context’ (1997: 48). This model is based on the ‘essay-text’ form of literacy and generalises from what is ‘a narrow, culture-specific literacy practice’ (1984: 1). According to the autonomous model, literacy progresses in a single direction—from oral to literate—with progress also indicating social and cultural progression, ‘civilization, individual liberty and social mobility’ (p. 2). Literacy is isolated as an independent variable and then studied for its ‘consequences’, economic and cognitive.

Street calls the ideological and autonomous models ‘approaches to the analysis of literacy’ (p. 1) and uses them as ‘ideal types’ to clarify ‘significant lines of cleavage in the field’ (p. 3). These lines of cleavage are clearly seen in the heated exchanges over ‘literacy crises’ in countries such as Australia, the US and England and in calls for back-to-basics, functional literacy approaches as a solution to these crises (eg Carrington 2005a; Chall 1967; Freebody 1997; Green, Hogdens and Luke 1994; Snyder 2008; Wyse and Styles 2007) (see 1.2). While issues of ‘power-in-literacy’ (Collins and Blot 2003: 66) play a role in the conclusions offered by Scribner and Cole (1981) and Heath (1983), Street’s ideological model, by pointing out that literacy is never neutral, allows a stronger analysis of issues of power. Street’s models are also useful because they provide a framework which helps ‘draw attention to the underlying coherence and relationship of ideas which, on the surface, might appear unconnected and haphazard’ (Street 1984: 3). These models have been used by researchers in language and literacy (eg Besnier 1995; King 1994), media education (eg Buckingham 1993) and history (eg Thomas 1993), among other fields.

Street’s use of literacy *practices* has also been very influential. He develops this idea from Scribner and Cole (1981) and uses it as a way of describing how different uses of literacy seemed to be associated with different activities or domains of life. Baynham (2004) suggests that Street’s development of literacy practices, and his clarifying of the relationship between literacy events and practices (eg Street 2000), is a useful place to see the coming together of sociolinguistics and the ethnography of communication—embodied in Hymesian notions of ‘speech event’ and in Heath’s ‘literacy event’—with more anthropological and sociological notions of practice (cf Bourdieu 1977, 1990; de Certeau 1984; Giddens 1984). The idea of literacy practices has become central to how researchers in the NLS and related fields conceptualise the uses of literacy and how to go about investigating these uses (see 5.2).

The first generation studies reviewed here developed critiques of the autonomous literacy model and challenged the idea of a great divide arguing that 'literacy by itself is not determining or causal' (Collins and Blot 2003: 65). These studies and others took up the challenge of establishing a new research agenda more attuned to the social and cultural embeddedness of literacy and, by extension, to the power dimensions of the communicative practices of 'ordinary people in ordinary activities' (Szwed 1981: 14). This has also meant moving beyond conceptions of literacy as singular, universal and neutral, to understanding *literacies* as diverse, multiple and non-neutral (cf Kress 1997a; New London Group 1996; Street 1997). Significantly, Street and Heath also demonstrate how literacy practices in one domain can both enable and disable when used in another domain. The tajers in Street's study adapted their religious maktab literacy for commercial activity, while Heath's children from Roadville and Trackton were disabled when confronted with mainstream school literacies.

Early NLS work has been usefully applied to formal education contexts. There is an implicit pedagogical and curriculum interest in much of the early NLS: questions about the relationship between school and other domains and their practices are core interests. Heath, for instance, is directly concerned with the development of culturally responsive pedagogies, while Street compares the relevance of maktab, commercial and school literacy in the lives of villagers. Many of these studies seek to understand why schooled notions of literacy—the ability to read and write school-type print texts—have become reified as literacy *par excellence*, as if it were the sole definition (cf Scribner and Cole 1981; Street and Street 1991). First generation studies take literacy firmly out of the school and hold it up against other forms of literate practice in order to denaturalise school versions of literacy. In the next section, I discuss some of the work done since these first generation studies.

2.3 Second generation NLS research

In this section, I give a brief account of key studies and researchers who work from positions established by first generation researchers and who extend this work. In particular, I discuss research developed in response to earlier NLS work in two related areas: (1) studies of literacy in community and cross-cultural settings and (2) studies of literacy in and around classrooms and schools. Research in both these areas challenges the dominance of 'essay text' literacy by presenting examples of literacy practices

which contrast markedly with official literacies in schools. This research also offers theoretical, conceptual and methodological tools useful for my analysis. These tools include: literacy events and practices (see 5.2), domains and networks (Barton and Hamilton 1998), the notion of Discourse (Gee 1996) and vernacular and hidden literacies (cf Finders 1997). There are, of course, many other useful research areas but the constraints of the study preclude discussion of these in any detail (eg research on multilingual literacies: see Gregory 1997; Hornberger 1989, 2000; Jones and Martin-Jones 2000; Kalmar 2001; Miller 2003).

Literacy in the community

Many second generation studies continued to pursue an interest in the 'everyday' and 'ordinary' and signaled a move away from an explicit focus on schooling and pedagogy and towards an examination of literacy use in daily life and in social and cultural contexts outside traditional education (cf Barton and Ivanic 1991; Besnier 1995; Fishman 1988; Schieffelin and Gilmore 1986; Street 1993; Wagner 1993). These studies sought to present rich ethnographic accounts of the heterogeneous nature of literacy and were influenced by the anthropological, sociological and sociolinguistic roots of early NLS research (cf Basso 1974; Hymes 1974; Swed 1981).

David Barton and Mary Hamilton's study, *Local literacies* (1998), which examines out-of-school settings and adult literacy, epitomises second generation NLS research. In this study of reading and writing in one community—the neighbourhood of 'Springside' in Lancaster, England—they combine social approaches to the study of literacy with a broader social history of literacy in Lancaster. These elements provide a detailed picture of how reading and writing practices are embedded within local cultures and practices and how these are influenced (enabled and disabled) by changes within and outside of the 'local' community, that is, in wider social and cultural contexts (see 4.3).

Barton and Hamilton's work has helped refine notions of literacy events and literacy practices and connect these concepts to the use and production of texts (see 5.2). They also develop other theoretical tools useful for the current study. In attempting to 'describe the social relationships which characterise literacy practices and the power and identity dimensions of these' (1998: 16), they employ the idea of *networks*, noting that these function in a variety of ways to support, enable, constrain and coerce literacy practices. They argue that understanding the networks people participate in is

important because ‘much of people’s reading and writing involves other people and is located in reciprocal networks of exchange’ (p. 254) (cf Gee 1996, 2003). Barton and Hamilton (2000) argue that whereas early social studies of literacy designed and offered classifications of the functions and uses of literacy for individuals (eg Heath 1983; Taylor and Dorsey-Gaines 1988), second generation studies ‘move beyond this approach, to examine how literacy activities are supported, sustained, learned and impeded in people’s lives and relationships, and the social meanings they have’ (p. 12).

Their work also provides a theorisation of *vernacular literacies*, a concept particularly useful for the current study (see 2.4 and chapter seven). Vernacular literacy practices ‘are essentially ones which are not regulated by the formal rules and procedures of dominant social institutions and which have their origins in everyday life’ (1998: 247), but they are also ‘hybrid practices’ which are combinations of different practices from different domains, and not wholly separated from ‘dominant literacy practices’ (p. 252) (cf Maybin 2007; Moss 2000, 2001). Within the notion of ‘vernacular literacy practices’, they distinguish vernacular texts and vernacular practices: for example, responding to an official letter with another written text and the processes which might surround the creation of such a text. Barton and Hamilton suggest six useful overlapping and complimentary areas of everyday life in which vernacular literacies play a significant role:

1. in organising life
2. for personal communication
3. for private leisure
4. in documenting life
5. for sense making
6. for social participation. (1998: 248-50)

These areas and activities of everyday life are linked to different *domains of practice*: family, household, neighbourhood, workplace and community. Barton and Hamilton use the notion of domain as a conceptual tool—it allows them to link particular literacy practices with different domains of life. They argue:

Domains are structured, patterned contexts with which literacy is used and learned. Activities within these domains are not accidental or randomly varying: there are particular configurations of literacy practices and there are regular ways in which people act in many literacy events in particular contexts. (1998: 10)

Domains of practice are associated with particular discourse communities, each with characteristic ways of ‘talking, acting, valuing, interpreting and using written language’

(p. 10) (cf Gee 1996). Significantly, Barton and Hamilton suggest that domains and discourse communities are not clear cut or bounded in straightforward ways, leading to 'questions about the permeability of boundaries, or leakages and movements between boundaries, and of overlap between domains' (p. 10) (cf Bulfin and North 2007; Dyson 1997). Within and across domains, there are tensions between vernacular and dominant literacy practices, especially evident when 'crossings' occur. They argue that institutional (and commercial) pressures tend to erode personal and vernacular literacy practices, pushing them out and occupying available space (cf 2.4). While there is some romanticism about vernacular literacies in Barton and Hamilton's work, they do show how vernacular literacies are negotiated in relation to dominant practices and how individuals and groups use them to get different things done.

As a result of their work over many years, Barton and Hamilton offer a succinct explanation of the social practice perspective on literacy:

- literacy is best understood as a set of social practices; these can be inferred from events which are mediated by written texts
- there are different literacies associated with different domains of life
- literacy practices are patterned by social institutions and power relationships, and some literacies become more dominant, visible and influential than others
- literacy practices are purposeful and embedded in broader social goals and cultural practices
- literacy is always historically situated
- literacy practices change, and new ones are frequently acquired through processes of informal learning and sense making. (Barton and Hamilton 1998: 7; 2000: 8)

These tenets have become generally accepted as representative of a social practice perspective on literacy (cf Larson and Marsh 2005). While Barton and Hamilton's work has been key to the continuing development of the NLS and its application to community contexts, a wide range of areas has also been examined by other researchers. These areas have included contexts such as the home (Moll, Amanti, Neff and Gonzalez 1992; Pahl 2002; Pitt 2000; Rogers 2003; Taylor and Doresy-Gaines 1988; Volk 1997; Volk and de Acosta 2003), the workplace (Gee, Hull and Lankshear 1996; Gowen 1992; Farrell 1997; Jones 2000a, 2000b), urban spaces (Compton-Lilly 2003; Cushman 1998; Gregory and Williams 2000a; Mahiri 2004), socio-religious communities (Kapitske 1995; Saxena 2000) and prisons (Wilson 2000). Cross-cultural settings have also been examined (Baynham 1995; Besnier 1995; King 1994; Moss 1994; Prinsloo and Breier 1996; Street 1993). Researchers have examined particular text-types (Ahearn 2004; Barton and Ivanic 1991; Barton and Hall 2000) and issues

related to literacy and gender (Cherland 1994; Finders 1997; Mace 1998; Millard 1997). These and many other second generation studies conducted outside-of-schools have provided insights into a broad range of communication practices and have extended and refined the NLS perspective, often by drawing on theoretical resources from other disciplines.

Many second generation studies have attempted to voice an alternative politics of literacy concerned with the way earlier Western anthropology, sociology, linguistics and education tended to view other cultures and their communicative practices as inferior or underdeveloped (see 2.2). NLS researchers have drawn attention to the marginalisation of literacies not associated with Western schooling and how these were judged against a narrow school-based standard. Niko Besnier (1995) points out that Western education practices and school language learning have long been synonymous with literacy. He explains:

Proponents of an ideological model (Street 1984, 1988, 1993) find highly suspect the uncanny resemblance between middle-class academic ways of viewing literacy in post-industrial societies and the social, cultural, and cognitive characteristics purported to be the consequences of literacy. (p. 3)

In this sense, second generation NLS research can be read as a sociopolitical intervention aimed at challenging Western-centric views of school literacy as the norm against which all others were to be judged. NLS researchers, with a kind of democratic fervour, hoped their efforts to document and raise the status of the rich range of literacies used by people in their daily lives would lead to some redress in the way out-of-school literacies were viewed and taken account of by those in positions of power. This documenting has also enabled a more accurate and textured description of literacy as multiple, ideological and embedded in social and cultural practices—schooling being just one of these. This goal—that documenting and supporting alternative literacies would lead to recognition, valuing and redress—has been critiqued for assuming issues of power could be overcome simply by highlighting issues of power (cf Collins and Blot 2003; Moss 2000, 2001). The current study recognises the complexity and difficulty of educational change and argues for a more realistic depiction of literacy practices in schools—a depiction which includes both sanctioned and unsanctioned uses of literacy and new technologies.

Gee: literacies and d/Discourses

While not wanting to locate his work exclusively within second generation NLS, Gee's substantial body of work has been influential in the area, both conceptually and methodologically (1990, 1991, 1992, 1996, 1997, 2000, 2001, 2002, 2003, 2004, 2005). His *Social linguistics and literacies* (Gee 1990, 1996) is a key text in the formation of the NLS for the work it does pulling together strands of thinking from earlier research into a more-or-less coherent theory of language, discourse and social practice. He has developed and popularised a number of important concepts and tools which researchers in a range of fields have found useful. Of particular interest to this study are Gee's notion of Discourse (Gee 1990, 1991, 1996, 2005) and his work on borderland discourses (Gee 1996, see also Wilson 2000) and semiotic domains (Gee 2003).

In Gee's concept of Discourse, language and literacy are 'elements in larger wholes: elements in multiple and socioculturally diverse "ways of being in the world" or "forms of life" (Wittgenstein 1958) which are meaningless if taken out of these forms of life' (1996: 122). For Gee, Discourses integrate 'language bits' or language-in-use ('connected stretches of language that make sense', what Gee refers to as 'discourses' with a lower case 'd') and the social practices and extra-linguistic 'stuff' in which language bits are embedded and which are used to enact specific identities and activities. He defines a Discourse as:

A socially accepted association among ways of using language, other symbolic expressions, and "artifacts", of thinking, feeling, believing, valuing, and acting that can be used to identify oneself as a member of a socially meaningful group or "social network", or to signal (that one is playing) a socially meaningful "role". (p. 131)

Meaning is always made within Discourses as individuals and social groups perform, reproduce and negotiate certain social identities or social positions recognised as characteristic of certain 'kinds of people'. Available social identities and positions are dialogically produced through the interplay of institutional, group and individual biography and history and individual creativity and agency (cf Bourdieu 1977, 1990). As such, Discourses are not individual 'identity kits' but are ' coordinations' of social activities (including ways of using language) involving human and non-human actors (cf Latour 1993; Gee 1997). This means that 'membership' in a Discourse is only ever 'settled provisionally as part and parcel of shared histories and on-going activities' (Gee

1996: 131). Most importantly, Discourses are always ideological: they involve 'viewpoints about the relationships between people and the distribution of social goods' (p. 132) and so will invariably privilege some 'forms of life' and marginalise others. Discourses that lead to valued social goods are 'dominant Discourses' (p. 132). It follows that acquiring a Discourse, whether dominant or otherwise, means negotiating the values and beliefs embedded within the Discourse. We are all part of many different Discourses, some of which are in conflict.

Discourses have fuzzy edges making it impossible to draw neat boundaries around them; they are always contested. Gee notes how Discourses influence one another in positive and negative ways and 'sometimes breed with each other to create new hybrids' (Gee 2005: 7). Similarly, Mastin Prinsloo (2005a) argues that bounded notions of Discourse are problematic 'as it has become clearer ... that discursive influences on family, popular and institutional culture are much more varied and interwoven in the multi-lingual and multi-cultural contexts that characterise so much of social space in contemporary times' (p. 23). These hybrids, or *borderland discourses* (Gee 1996), are those created by (re)mixing Discourses from the home, school and other institutions and using them in spaces 'in-between' these institutions and in their cracks and fissures (see chapter seven and eight). Recently, Gee has developed the notion of *semiotic domains* which he uses to extend his notion of Discourse (Gee 2003, 2004). He says:

by semiotic domain I mean any set of practices that recruits one or more modalities (e.g., oral or written language, images, equations, symbols, sounds, gestures, graphs, artifacts, etc.) to communicate distinctive types of meanings. (2003: 18)

Semiotic domains are broader than Gee's notion of Discourse and allow for a more fluid rendering of how individuals and groups are situated within everyday life and in specialist semiotic domains (eg 'theoretical linguistics' or 'first-person shooters'). Those associated with a semiotic domain are an *affinity group*. Members of affinity groups are able to recognise typical 'content' or knowledge associated with the domain and also typical and non-typical social practices, ways of thinking, acting, interacting, valuing and believing associated with a given domain. Gee's work here is conceptually useful but also methodologically practical. Discourses, semiotic domains and affinity groups put literacy events, activities and practices into context, providing a way to carve up and make sense of data (see 5.2).

The concepts of borderland discourses and more fluid semiotic domains, as well as Barton and Hamilton's theorisation of vernacular literacies and hybrid practices, raise the possibility of investigating forms of literacy which cut across home and school and which exist in institutional gaps. In the following section, I move the focus back to schools and look specifically at work directed at such an endeavour (for a discussion of discourse analysis see 5.2 and for comments on the relationship between context and discourse see 4.4).

Back to school

Despite the proliferation of studies of literacy in out-of-school settings, NLS researchers have retained both an implicit and explicit interest in the educational implications of language and literacy use (cf Baynham 2004). As noted above, particular types of literacy have long been associated with formal learning and academic success and so school and education settings are never far from the frame of interest for NLS researchers (cf Street and Street 1991). Some studies examine connections between school and out-of-school literacies, exploring how community, home and school might be 'bridged' (cf Hull and Schultz 2001, 2002; Moje and Hinchman 2004; Schultz 2002), while others make literacy use in schools and classrooms a central focus (cf Bloome 1989; Cazden 2001; Gallego and Hollingsworth 2000; Moje and O'Brien 2001; Rampton 2006). In this section, rather than attempt to provide a general overview of classroom and school-based literacy research—a fraught exercise given the volume of work available—I focus on one element of this work particularly relevant to the current study. Building on Barton and Hamilton's theorisation of vernacular literacies and Gee's (1996) development of borderland discourses (cf Wilson 2000), I discuss work which has examined unofficial or unsanctioned literacies within school environments, a significant focus of this study.

As noted above, vernacular literacies and borderland discourses are a feature of communication and literacy use in out-of-school contexts. They are also a significant part of school life. Literacy researchers have noted that classroom interactions commonly follow two lines of activity: one 'organised and orchestrated by the teacher', activities which are 'foregrounded, public and dominant'; and a second line of activity of 'peer social interaction ... maintained through such channels as covert talk and secret notes ... content meant for peers, not adults' (Gilmore 1986: 156; cf Jones 1989). Both lines of activity flourish in school, one describing the official work of schools, classes

and teachers, the other embodying not just covert talk but all other aspects of the 'communicative life of the institution' (Barnes 1976: 14), the informal and unsanctioned (cf Finders 1997) forms of discourse. There is a small but growing number of studies examining how this second line of activity represents an untapped resource for young people and for teachers, some of which are reviewed here and others referred to later in the analysis chapters (see part three).

Perry Gilmore (1986) examined 'sub-rosa' literacy—'skills owned and demonstrated in peer contexts' (p. 156)—contrasting them with language and literacy-related skills identified and described within school culture. Contrary to claims made by teachers in Gilmore's study—that students didn't write, that they had deficiencies in word analysis, in comprehension, in identifying themes in texts and in reading complicated expository texts—Gilmore found that in fact the young people wrote all the time. She gives two examples of activities where students displayed literacy abilities that their teachers claimed they didn't have: a young girls' game called 'steps' and the role playing game 'Dungeons and dragons'. In the first, Gilmore shows how groups of girls playing 'steps' used linguistic play and physical dance to spell out certain words like 'Mississippi' in a quasi-instructional-looking group game (cf Prinsloo 2004). The girls reframed the instructional nature of spelling activities typically practised in the school, adding street style and their developing sexual swagger. This resulted in a recontextualisation of literacy skills (ie rhyming, syllabification, identifying medial blends, recognising semantic differences in homophones, syncopation and melodic prosody) where these are 'taken from the school's mode of literacy instruction and made a part of the children's own world' (Gilmore 1986: 162). In Gilmore's second example, boys poured over 'Dungeons and dragons' game manuals—complex expository texts—prepared written character and dungeon descriptions, kept detailed logs and journals, wove 'complex and fanciful narratives around the structured themes' (p. 165), demonstrated competence with a highly technical and complex lexicon, interpreted charts, graphs and cross referenced with other guides, manuals and handbooks. They did this at home and at school during breaks.

Gilmore argues that students' abilities were not recognised because they were part of sub-rosa literacies which did not 'correspond with institutionally recognized norms of literacy instruction' (p. 159). In the eyes of their teachers, student ability was tied to being able to produce sanctioned modes of literacy rather than unsanctioned ones. She also argues that sub-rosa literacies gave young people opportunities to experience

growing mastery and sophistication in their communicative practices—practices which had more connection to their peer and social lives than did school literacies. In this sense, both examples are ‘pronouncements of literacy and language prowess, but in a counter-culture event’ (p. 166).

Following a similar line of inquiry, Amy Shuman’s study, *Storytelling rights* (1986, 1993), describes how young people in an urban US public high school used vernacular writing and speaking practices to contest typical school uses and understandings of writing and speaking. While school writing tends to be framed as an individual (and competitive) task (cf Doecke and Parr 2005), Shuman found that almost all writing students produced in and out of classes was collaborative: forged notes, conversational note exchanges, lists and letters were all commonly authored by pairs and groups. Shuman shows how her participants used these collaborative writing processes and the resulting texts to ‘contest, negotiate, or manipulate adult authority’ and also to reproduce and play with what she calls ‘adult authoritative discourse’ (Shuman 1993: 248). She describes common situations where students used writing as a mediator of social distance, making threats to others or answering challenges to themselves and their peer group through writing. Instead of using writing and speaking in school sanctioned ways—writing to create authoritative distance and speaking as a face-to-face activity—students used writing and speaking for creating both distance and proximity. Students used writing to ‘say’ that which could not be said. The young people’s use of written texts was closely connected to oral challenges, performances and retellings of significant events in their school life (eg peer conflict and schoolyard fights).

Building on Shuman’s work, Miriam Camitta (1993) explores the kinds of texts young people produce through their vernacular writing and the relationship these texts and literacy practices have to adolescent experience. For Camitta, who worked with her own students in an urban US public high school, vernacular writing is ‘closely associated with culture which is neither elite nor institutional’ (p. 228). In her study, vernacular writing figured in young people’s lives in a variety of ways: ‘as a part of conversation, a mode of self-disclosure, a personal statement and a monument to the individual’. She argues that personal and creative writing is often a ‘motion towards intimacy’ (p. 243). Camitta shows how vernacular literacies are, on the one hand, ‘significant and meaningful literate skills and resources’ and, on the other, ‘artificially disconnected from the process of literacy education as it is officially conducted’ (p.

229). She points to the way vernacular discourse, like popular culture, is 'eschewed in institutions of education as deviant or non-standard' and argues that it should be seen as 'literate behaviour that conform[s], not to the norms of educational institutions, but to those of social life and culture' (p. 229). Of particular interest to the current study is Camitta's move to broaden what might pass for participation in a literate community. She argues:

Adolescents appropriate cultural materials and incorporate and transform them into their own written texts. They collaborate with other individuals in the construction of those texts. They work out their identities against the experience of others through performance or publication of their texts. (p. 243)

She notes that while not all students actively authored texts, many students 'were conversant with the variety of written genres and could assume a number of roles in a writing event' (p. 236). This knowledge gave those with indirect involvement (those that did not author texts in the traditional sense) status and expertise within the community that allowed them to become at various times, editors and a critical audience, readers and recipients, consultants and ghostwriters, publishers and consumers, scribes and collaborators, and arbiters of taste. Students who did not regularly produce texts in the traditional sense often became 'experts of a sort, familiar with the forms of taste and style, but not regular producers of texts' (p. 236). She found the role of those involved indirectly in the literate community 'was to participate in the reproduction and transmission of written texts' (p. 236). Direct and indirect involvement also included the collecting, archiving and creation of artefacts of writing and written texts. Camitta argues that participation in a literate community can be signalled through direct and indirect practices involving the flow and exchange of artefacts and forms of material and symbolic capital. This is a more open-textured notion of participation that involves all kinds of interactions and practices, not only around the production of written texts but also around participation in discourses, semiotic domains and affinity groups. Such a reframing epitomises an ideological and social approach to literacy and is particularly useful when considering the operation of literacies and sub-rosa literate communities in schools.

In her studies of young children's writing in school, Dyson (1993, 1997, 1999a, 1999b, 2003) illustrates vividly how children combine and remix diverse cultural resources (ie drawing on their knowledge of popular media cultures) in their attempts to learn and practise officially sponsored school writing. Arguing that children have 'varied textual landscapes against which to interpret the school's efforts to teach them written

language' (2003: 6), Dyson documents how children use processes of recontextualisation to 'borrow and revoice' (p. 13) symbolic resources from these landscapes, using them as material in their conversations, in their written narratives and drawings and in their imaginative play and identity work. She argues that 'through an eclectic mix of appealing symbolic stuff, children produce their cultural practices and, thereby, their friendships, expressive practices, and imaginative worlds' (p. 5). Her work suggests that the home-school boundary is *permeable*. It also reframes narrowly developmental understandings of how children learn to write and come to make meaning with and through texts. She argues:

It is not the presence of singular bits of written language experiences that are developmentally critical (as valuable as those experiences may be) but the complex gestalts of children's cultural resources. Those resources evidence children's powers of adaptation and improvisation; and it is children's exploitation of these cross-cultural childhood strengths (Stephens, 1995; Sutton-Smith, 1997) and their ways of stretching, reconfiguring, and rearticulating their resources, that are key to literacy learning in contemporary times. (p. 5-6)

For Dyson, practices and cultural artefacts—or symbolic resources—while linked to a particular domain or space-time, tend to bubble up in different places, often in unexpected ways. The transporting and transforming of such materials across symbolic and social borders is key to the idea of recontextualisation: 'processes of differentiating, appropriating from, translating across, and reframing textual material within communicative practices and their symbolic media' (p. 12) (cf Bernstein 1971, 1996). Dyson suggests that there are important reasons for recognising and encouraging this kind of work within schools and classrooms:

In recontextualizing ... material in school contexts, children reorganize and rearticulate their resources and, in the process, they may differentiate and expand their knowledge about symbolic systems, social practices, and the ideologically complex world. (2003: 15)

Research like that of Gilmore, Shuman, Camitta and Dyson suggests how and why young people use vernacular literacies—that is, how and why they use diverse symbolic and communicative experiences—in and around classrooms and schools as well as in out-of-school environments. These studies argue persuasively that the use of vernacular literacies is integral to young people's educational experiences. Similar to second generation NLS studies, this work can be read as a response to the devaluing and marginalisation of literacies rooted in non-school ways of knowing and a challenge to the view of literacy as synonymous with schooling (cf Street and Street 1991). In

addition, this work suggests that in- and out-of-school literacies are connected and intertwined rather than simply mismatched. Where researchers such as Heath drew attention to the problems of a home-school mismatch, these researchers recognise the mismatch but also note possible connections between communicative practices in, out and around homes and schools.

The current study also focuses on the connection between school and out-of-school literacies, but identifies and theorises this connection as a process of negotiation between practices typically used in either place (see 1.4 and chapter eight). It considers how these practices are recontextualised into hybrid forms in schools and classrooms in the context of young people's use of new media technologies. The studies reviewed in this section are significant because they show how these processes occur, often within the context of alternative or vernacular reading and writing practices and in relation to unsanctioned texts. They represent literacy practices enacted in schools but located beyond the scope of the official curriculum (eg Finders 1997; Gomez, Stone and Hobbel 2004).

In the next section, I discuss a group of studies which extend this discussion of vernacular or unsanctioned literacies by drawing on the work of sociologists Erving Goffman (1962) and Michel de Certeau (1984).

2.4 Unofficial and unsanctioned literacies

The group of studies discussed in this section provide a further framework for understanding the operation of vernacular and unsanctioned literacies in schools and classrooms, particularly the role these literacies play in the negotiation of identities, social relationships and power. At the core of these studies is the sociological work of Erving Goffman and Michel de Certeau: Goffman's (1962) notion of *underlife* and de Certeau's (1984) work on the *uses and tactics of consumers*. I provide an outline of each concept and its relevance to the current study, then examine how literacy researchers have used each concept.

Goffman and underlife

Goffman developed the notion of underlife in his work on ‘total institutions’—mental hospitals and asylums, prisons and army barracks. ‘Underlife’ can be understood as the activities (or information games) individuals use to indicate that their identities are different from, or more complex than, the identities assigned to them by organisational roles (Brooke 1987). In Goffman’s studies, conducted in a large Eastern American mental hospital, ‘inmates’ used underlife activities to assert a different self from the ‘patient-self’ assigned by the hospital. For Goffman, such practices constitute the underlife of an institution and are ‘to a social establishment what an underworld is to a city’ (Goffman 1962: 199). Goffman goes on to argue that underlife activities are a general characteristic of institutional life: for example, in the hospital he studied, staff and inmates engaged in underlife behaviours regardless of their institutional status and position. Importantly, underlife is more than an ‘incidental mechanism of defence’ against institutional expectations and norms, but is ‘rather an essential constituent of the self’ (p. 319).

Goffman argues that all people employ underlife practices as part of their identity-making activities and everyday life-coping strategies. Schools, for instance, offer students particular schooled identities and require compliance with these before school success is bestowed (cf Gilmore 1986; Labaree 1997). Despite this, Goffman notes:

Whenever we look at a social establishment, we find a counter to this first theme; we find that participants decline in some way to accept the official view of what they should be putting into and getting out of the organization and, behind this, of what sort of self and world they are to accept for themselves. Where enthusiasm is expected, there will be apathy; where loyalty, there will be disaffection; where attendance, absenteeism; where robustness, some kind of illness; where deeds are to be done, varieties of inactivities. We find a multitude of homely little histories, each in its way a movement of liberty. Whenever worlds are laid on, underlives develop. (1962: 304-5)

Rather than being a static concept, the notion of underlife allows for a kind of *identity dialogue* between competing selves (cf Bakhtin 1981). Social organisations place, organise and co-ordinate people and groups into particular roles, which in turn make particular identities available and others less available (cf Gee 1997). But individuals and groups do not always take up these roles and identities uncritically, actively negotiating their induction or apprenticeship into such roles, identities and discourses

(cf 1.4). This process might be called *identity negotiation* and is key to my use of underlife. Underlife practices allow the take-up of critical, playful and irreverent stances towards expected roles and indicate (display or perform) this alternative position-taking to others (cf Goffman 1959).

There are two more or less distinctive types of underlife: disruptive and contained. Disruptive forms of underlife are 'where the realistic intentions of the participants are to abandon the organization or radically alter its structure, in either case leading to a rupture in the smooth operation of the organization' (1962: 199). Contained forms of underlife, on the other hand, attempt to fit into or operate within 'existing institutional structures without introducing pressure for radical change' (p. 199). Goffman found contained forms to be much more common in those sites he studied. Similar claims have been about underlife in schools (Gutierrez, Rymes and Larson 1995; Larson and Gatto 2004; Sterponi 2007).

A small number of literacy researchers have taken up Goffman's notion of underlife (Brooke 1987; Finders 1997; Gutierrez, Rymes and Larson 1995). Robert Brooke (1987) uses the concept to examine his college writing classes noting 'those behaviors which *undercut the roles expected of participants in a situation*—the ways an employee, for example, shows she is not just an employee, but *has a more complex personality outside that role.*' (p. 141, emphasis added). Brooke's examples include students disobeying the teacher and subverting class time by writing letters instead of class notes or whispering with friends about non-class related matters. He also argues that authority figures, in his case, teachers, engage in underlife practices, citing the use of alternative writing pedagogies (writing workshops, small-group conferencing, focusing on student 'voice') which challenge traditional institutionally backed pedagogies. Brooke suggests that underlife practices combine both the creative and the critical and are not simply acts of dogged resistance. He argues: 'exactly because organizations offer definitions of identity, they also offer individuals the opportunity to respond to the definitions in *creative ways*' (p. 142, emphasis added). In the exercise of agency, however limited, creative imagination is required (cf Misson 2003; Pope 2005).

Kris Gutierrez, Betsy Rymes and Joanne Larson (1995) argue that attending to how relations of power are played out through discourse and social roles in classrooms means making room (social and discursive) for both teacher 'script' *and* student 'counterscripts'. They use underlife to describe students' 'strategies of differentiation',

employed to challenge their teacher's deficit classroom discourse. In the study, the teacher positions the students as deficit because they do not read the daily newspaper as the teacher thinks they should. In response, the students show quite creatively that, in Brooke's terms, they have more complex identities outside of the classroom than the teacher recognises. They discuss references to popular music, film and television, asserting forms of knowledge which have credibility outside of the school and in peer contexts (cf Gilmore 1986). The authors argue that while student underlife develops freely in all classrooms, it is rarely used productively by teachers. They show how teachers and students tend to 'maintain distinct defensive spaces' for their scripts and counterscripts resulting in a reinforcing of 'traditional classroom power relations' (p. 452). They maintain that bringing teacher scripts and student counterscripts together can create heteroglossic social spaces for more productive and inclusive classroom work. The framing of this argument within critical pedagogy means it is a little overblown, placing too much emphasis on teacher action and pedagogical change as a catalyst for broader educational and social change.

Margaret Finders (1997) provides another useful perspective on unofficial literacies in her study of adolescent girls' in a US junior high school. Finders melds sociocultural perspectives on literacy with Goffman's underlife to develop the concept of *literacy underlife*. A literacy underlife is constituted through 'those practices that refuse in some way to accept the official view, practices designed and enacted to challenge and disrupt the official expectations' (p. 24). She contrasts these underlife literacies with what she calls 'sanctioned literacies', defined as 'literacies that are recognised, circulated, and sanctioned by adults in authority' (p. 24). With this framework, she examines the literacy activities of two groups of young women, the 'tough cookies' and the 'social queens'. She documents the girls' participation (both central and peripheral [cf Camitta 1993]) in sanctioned and underlife 'literacy rituals' within the school, such as school year-book signing, reading and sharing teen zines and writing toilet-wall graffiti and contrasts these with home literacies, such as party-plan events and home-making. Finders argues that these and other literacy practices were used to define and redefine identities, social roles and relationships:

Literacy provided a tangible means by which to claim status, challenge authority, and document social allegiances. Note-passing and writing on the rest-room wall, for example, served as acts of resistance while also creating strong bonds of solidarity among the girls. (p. 4)

Importantly, Finders shows how these underlife literacies are ‘constituted in the interstices between official classroom literacy activities, the peer group and the literate underlife of contesting official expectations’ (Christian-Smith 1997: vii). In summary, Finders suggests that the young people in her study used literacy underlife to:

- assert independence
- control, moderate, and measure their growth into adulthood
- act as a visible rite of passage, as a cultural practice to mark oneself as in control and as powerful
- negotiate between competing sets of expectations
- provide ‘play time’ away from adults
- provide opportunities to try on and test out more adult roles
- entertain themselves and avoid boredom (Finders 1997).

Where Finders’ use of underlife is limiting is its application only to the activities of the girls and not to those of adults. In contrast, Goffman’s work found underlife activities amongst both inmates and guards. Underlife practices are also employed in a range of subtle ways, not always in prototypical defiant opposition to a dominant assertive power. For example, young people often display a kind of critical techno-savvy in their digital literacy practices that suggests they are not the dupes they are often made out to be in the popular press (cf Buckingham 2007); they are not necessarily the engaged cyberkids either (cf Facer and Furlong 2001) (see 1.2 and 3.4). None of these researchers (ie Goffman, Brooke, Gutierrez, Rymes, Larson and Finders), addresses technologically mediated literacy practices. The current study builds on this work but adds a technological element to the analysis, examining how participants use new technologies to facilitate, negotiate and augment their underlife activities.

De Certeau and tactics

There are interesting connections between the concept of underlife and de Certeau’s notion of the ‘uses and tactics of consumers’ (de Certeau 1984). Both concepts are deeply concerned with ‘the countless ways of “making do”’ (p. 29), the witty ruses and clever tricks which people employ in their everyday lives to maintain a sense of self and to put distance between institutionally imposed roles and their own lifeworlds. De Certeau calls these ways of making do, ‘procedures of everyday creativity’ (p. xiv) or ‘uses and tactics’. He describes tactics in general terms as ‘calculated actions’ and ‘ways

of operating', which 'constitute the innumerable practices by means of which users reappropriate the space organized by techniques of sociocultural production' (p. xiv). Tactics are designed to play havoc with established systems. More specifically:

The space of a tactic is the space of the other. Thus it must play on and with a terrain imposed on it and organized by the law of a foreign power. It does not have the means to *keep to itself*, at a distance, in a position of withdrawal, foresight, and self-collection: it is a maneuver "within the enemy's field of vision" ... and within enemy territory ... It operates in isolated actions, blow by blow. It takes advantage of "opportunities" and ... must accept the chance offerings of the moment, and seize on the wing the possibilities that offer themselves at any given moment. It must vigilantly make use of the cracks that particular conjunctions open in the surveillance of the proprietary powers. It poaches in them. It creates surprises in them ... It is a guileful ruse. (p. 37, emphasis in original)

In discussing the ways uses and tactics are employed to resist and manipulate established orders, de Certeau also notes:

Innumerable ways of playing and foiling the other's game ... characterize the subtle, stubborn, resistant activity of groups which, since they lack their own space, have to get along in a network of already established forces and representations. People have to make do with what they have. In these combatants' stratagems, there is a certain art of placing one's blows, a pleasure in getting around the rules of a constraining system. (p. 18)

While the focus of tactics is resistance, it is not prototypical resistance and is closer to Goffman's contained underlife. De Certeau's vision of tactics is modest and not chiefly about an overthrow of the establishment. Rather, his concern is to understand how, despite 'the grid of "discipline" ... everywhere becoming clearer and more extensive' an 'entire society [or students and teachers within schools, for instance] resists being reduced to it' (p. xiv). This moves de Certeau to examine the 'popular procedures (also "miniscule" and quotidian) [which] manipulate the mechanisms of discipline and conform to them only in order to evade them' (p. xiv). In other words, rather than examine 'the representations of a society, on the one hand, and its modes of behaviour, on the other' (p. xii), he argues the importance of determining the *use* to which representations and behaviours are put: understanding the practices of everyday life. In doing this de Certeau breaks down the production-consumption binary arguing that everyday activities such as reading and shopping are in fact productions (or reproductions) where creativity is exercised and meanings made, where 'consumers' engage in a kind of everyday bricolage, pulling together different threads of social and cultural interactions in efforts to 'make do' (cf Sefton-Green 2006).

De Certeau views such 'making do' not as passive but as a type of 'hidden' production which reappropriates and rearticulates the products (representations, consumer products, language etc) of more powerful systems. Such 'secondary production' manifests itself 'through its ways of using the products imposed by a dominant economic order' (p. xiii). De Certeau gives two useful examples of tactics as creative production which have particular relevance for the current study. First, an example with reference to language use. He notes that speech acts are 'the construction of individual sentences with an established vocabulary and syntax', where infinite variation is possible within a contained (and constraining system). A speaker uses established elements, tools, products and spaces all of which are in 'general circulation and rather drab' (p. xviii) to reproduce alternative 'phrasings' in her/his own voice. Tactics are similar. This dialogic relationship between existing structures and present and future possibilities resonates with Bakhtin's (1981) ideas about double voicing:

The word in language is always half someone else's. It becomes "one's own" only when the speaker populates it with his own intention, his own accent, when he appropriates the word, adapting it to his own semantic and expressive intention. (p. 293-4)

Tactics operate by appropriating cultural resources (material and symbolic) and adapting these for alternative purposes. De Certeau's other example of tactics as creative production is the practice of *la perruque*, a particular tactic or way of operating (1984: 24-8). *La perruque*, or 'the wig', is 'the worker's own work disguised as work for his employer' (p. 25). It is not stealing in any material sense and the worker is '*officially* on the job' (p. 25, emphasis added). De Certeau notes that *la perruque* might be as simple as a secretary using company time (and a computer, printer and paper) to write a personal letter, or as complex as a cabinetmaker 'borrowing' a lathe to make furniture for his own home (p. 25). Such practices are variously penalised and ignored by different bosses. De Certeau notes:

The worker who indulges in *la perruque* actually diverts time (not goods, since he uses only scraps) from the factory for work that is free, creative, and precisely not directed toward profit ... he cunningly takes pleasure in finding a way to create gratuitous products whose sole purpose is to signify his own capabilities through his *work* and to conform his solidarity with other workers or his family through *spending* his time in this way. With the complicity of other workers (who thus defeat the competition the factory tries to instil among them), he succeeds in "putting one over" on the established order on its home ground ... *la perruque* reintroduces "popular" techniques of other times and other places into the industrial space (that is, into the Present order). (p. 26, emphasis in original)

These examples give some sense of how tactics operate in everyday life—their everyday creativity—and their relevance to formal education contexts such as schools (cf Jones 1989; Gomez, Stone and Hobbel 2004; Lankshear and Knobel 2002; Larson and Gatto 2004; Sterponi 2007).

De Certeau's work with uses and tactics has been applied by a number of researchers in language and literacy education. Colin Lankshear and Michelle Knobel (2002) propose the development of a 'pedagogy of tactics', noting three aspects of de Certeau's account of uses and tactics that are salutary when thinking about schooling, curriculum and pedagogy. The first is the orientation of tactics towards 'making do', which in an educational context could be seen as those practices which enable students to get by and to hold their own, to 'smooth out the [school] habitat and make it more livable' (p. 8). Lankshear and Knobel call this tactical orientation the 'sustaining side of uses and tactics' (p. 8). Such an orientation resonates with Goffman's contained underlife (Goffman 1962).

The second is the orientation of tactics to stronger types of resistance visible in phrases such as 'the art of placing one's blows' (de Certeau 1984: 18) or in 'putting one over on the established order' (p. 26). Lankshear and Knobel argue this orientation is 'about resisting, tackling, wearing away' (2002: 8) at strategic places and practices; the use of guerrilla-type tactics to strike and then fall back, over and over again. An orientation towards more active resistance maps onto Goffman's disruptive underlife. The third aspect of tactics valuable in educational contexts is the way that uses and tactics often employ inventiveness, wit, clever tricks, cunning, maneuvers, artistic-like creativity and other examples of 'smartness' (p. 8). Lankshear and Knobel suggest that these,

[f]orms of intelligent behaviour ... can be understood in terms ranging from Postman and Weingartner's (1969) notion of having an efficient "crap detector" ... to more mainstream concepts of kinds of "higher order" logics appropriate to a "meta age" that values originality, innovation, capacity to make quick shifts, and so on. (p. 8)

The potential of uses and tactics in educational contexts becomes more obvious when framed as orientations which young people might choose to employ during their time in schools and classrooms. Such orientations potentially allow young people to engage in practices of resistance, recontextualisation and solidarity as indicated in the following studies.

Joanne Larson and Lynn Gatto (2004) develop the notion of 'tactical underlife' in their ethnography of Gatto's composite second-to-fourth grade classroom. For Larson and Gatto, tactical underlife is 'the interplay between strategies and tactics and between disruptive and contained underlife' which Gatto and her students use 'to construct a unique space for learning within a restrictive institutional environment' (p. 12). The authors use this concept to describe the actions of Gatto herself as she mediates between the demands of state and district accountability measures and her own beliefs about effective instruction. Importantly, they note that social positioning and power relationships mean distinctions between tactics and strategies, and between contained and disruptive underlife, are fluid and changeable. For instance, the authors relate Gatto's tactical actions to those of her students, noting that in the classroom Gatto's tactics become strategies when used with students. The children in turn develop their own tactics: negotiating classroom structure, using avoidance behaviours and articulating learning in Gatto's classroom as fun.

Turning their attention more directly to students, Mary Louise Gomez, Jennifer Stone and Nikola Hobbel (2004) describe how young people in their study, members of an eighth-grade reading class in a medium-sized US high school, employed 'tactical literacies' to resist being labelled as 'remedial'. These students used non-school-sanctioned literacies to challenge their teacher's focus on the technical and structural aspects of their writing rather than the rich and challenging content of their work (replete with stories of relatives in jail for drug dealing etc). The authors show how the teacher's pedagogical choices, despite her intentions, alienate students and cast them in deficit terms. The students, by contrast, participate in official school literacy practices, such as mini-lessons on writing mechanics, while simultaneously subverting these activities through their divergent, pop-culture-laden-talk or their direct challenges, as groups, to the way their writing is framed by the teacher. The authors show how the students, through their use of tactical literacies, are able to resist institutionally imposed identities in favour of alternative identities offered through alignment and participation in other affinity groups (cf Gee 2001).

Despite the generative character of work based on de Certeau's notion of uses and tactics, these studies, like those informed by Goffman, do not examine new technology use amongst young people. In the current study, I extend this work to examine how young people employ literacies in tactical and underlife modes with respect to their use of new technologies within schools (see part three).

Both these broad frameworks—Goffman’s underlife and de Certeau’s uses and tactics—have at their core processes of negotiation where social, cultural, technological, political and historical elements jostle for position and influence. For Goffman, this is about the negotiation of identities and selves, the interplay between private and institutional roles. For de Certeau, processes of negotiation enable individuals and groups to ‘make do’ despite the strategic reshaping of social worlds around activities, identities, relationships, politics, sign systems and knowledge which often lead to the unequal distribution of power and social goods (cf Gee 2005). Data analysis illustrates how the participants negotiated both official and unsanctioned uses of digital technologies, employing uses and tactics to create, sustain and benefit from their digital literacy underlife.

In this chapter, I have developed a social and critical perspective on literacy by addressing those aspects of the New Literacy Studies most useful in understanding young people’s literacies as they relate to new technologies, especially within school environments. This research has developed complex and generative ways of understanding and explaining the social, cultural and technological practices of young people. In general terms, NLS research:

- challenges school literacy as the benchmark by which all other literacy practices should be measured
- shows how young people from diverse backgrounds develop and use varied and complex literacies in their everyday lives and within schools, and offers insights into how these might be drawn on in educational settings
- strengthens understanding of the partnership roles family, community and schools share in the processes of language and literacy learning
- highlights the significant role popular culture plays in young people’s language learning and identity development.

In chapter three, I examine how literacy researchers have taken account of new media technologies and discuss contemporary NLS theorising noting moves in the field that account of multimodality and globalisation (eg Pahl and Rowsell 2006a; Street 2007). In part, this contemporary research constitutes the third generation of literacy studies and represents a coming together of the NLS and literacy and technology studies around a more or less common set of research problems.

3

Social and critical perspectives on literacies and new technologies

Critical and historical perspectives on literacy reveal how literacy and technology have a linked biography and history (cf Mills 1978). While it is commonly assumed that technology is a recent add-on to literacy—something unique to contemporary times—technology has always been bound up with literacy. Consider, for instance, when writing paper and pens still seemed like new technologies or when clay tablets and cuneiform markers were the height of communications technology. The keyboard and computer may become (and perhaps have already become) so familiar as not to rate a mention. In this chapter, I extend the discussion begun in chapter two by examining how literacy researchers have taken account of new technologies.

First, I present a critical perspective on technology drawing from work in social history, critical theory and the sociology of technology. This critical perspective underpins the approach to new technologies developed in this thesis and offers a framework within which the research chosen for discussion—and the analysis and interpretation of the data—can be read. There is a valuable critical literature on technology and education frequently overlooked in favour of hyped-up technologism. I also provide an early-years-history of studies in literacy and technology (the late 1970s to the 1990s), examining the contribution early strands of research have made to later work. I then analyse key edited collections to provide a sense of the preoccupations of the field during the mid to late 1990s. Finally, I discuss recent studies (2000-2008), drawing out

current preoccupations, major themes and critiques of both the New Literacy Studies and studies of literacy and technology. A review of current research indicates a convergence of a number of related research fields around a set of common issues to do with literacy, new technologies, young people and schooling. Although research in the field of literacy and technology cuts across all education sectors—tertiary, secondary, primary and early childhood—in this chapter I focus on research particularly relevant to young people in secondary school.

3.1 Critical perspectives on technology

An approach to technology, characterised by a critical and reflexive view, is sometimes claimed to be a relatively new phenomenon. Such perspectives are not new, but too often are absent in research focused on educational technology. I begin this section by drawing on theories from a range of disciplines outside of education to develop a critical-historical position: from social and cultural histories (Edgerton 2007; Pacey 1983), studies of technology and society (Latour 1993, 2005; Marvin 1986; Winner 1986) and reframed Marxist critical theory (Feenberg 1991, 1999, 2002). With this framework, I discuss some of the main tensions associated with the use of new technologies in schools, arguing that an historical view of the close relationship between literacies and technologies and their actual use helps avoid technological and social determinism. Such a view also avoids treating literacy and technology as separate concerns and as separate historical developments and practices. This perspective on the historical, cultural and complex dialogical nature of literacy and technology has helped me to my efforts to avoid fetishising the technological aspects of the research. My aim has been to consider new technologies as intertwined with literacy practices.

In his book, *Shock of the old*, historian David Edgerton (2007) argues for a new and different kind of history of technology: a history of technology-in-use rather than a history of innovation or invention. According to Edgerton, a history of technology *use* is radically different from typical accounts of inevitable technological progress found in histories of innovation. He argues that discourses of heroic technological progress are powerful myths which have, ironically, remained largely unchanged through modern history. There are genuinely new technologies, but technological futurism is anything but new. Part of the problem, argues Edgerton, is that 'too often the agenda for discussing the past, present and future of technology is set by the promoters of new

technologies' (p. ix). Deterministic and hype-driven agendas about the inevitability of technological advancement are often stunningly ahistorical and engage in a kind of historical sleight-of-hand, erasing the long, winding and often accidental road of technological development. By contrast, *use-centred* histories encourage a more critical view of the development and use of technologies, based on a long-term historical perspective. Edgerton puts it this way:

When we think of information technology we forget about postal systems, the telegraph, the telephone, radio and television. When we celebrate on-line shopping, the mail-order catalogue goes missing ... A history of how things were done in the past, and of the way past futurology has worked, will undermine most contemporary claims to novelty. (p. xvi)

Instead of a linear story of smooth, measured progress, focused on technological discoveries—often heroic tales from above—*use-centred* histories provide views from below which emphasise how technologies are used in different contexts by different people for different reasons. When *use* is the focus, all places and practices are significant, as cultures (or communities) negotiate practices around their use of technologies.

Edgerton argues that technological invention, innovation and development crucially involve choice over alternatives: 'A central feature of use-based history ... is that alternatives exist for nearly all technologies ... Too often histories are written as if no alternative could or did exist' (pp. xii-xiii). Edgerton's argument is a call to recognise the 'forgotten alternatives' so easily written out of the historical record and, importantly, what choices between alternatives suggest about human values. This position encourages questions like, 'how and why did we arrive at the current moment?' and 'how might the current situation be otherwise?' The recognition that history is full of alternatives foregrounds the social and cultural aspects of technological development and ensures that technological processes can never be seen as natural or neutral, but as always political. Edgerton also notes that old and new are not mutually exclusive, but mostly coexist and 'mix and match across the centuries' (p. xii). Such 'creole technologies' (p. xiv) are strong evidence against claims for technological newness (cf Bolter and Grusin 1999; Cuban 1986; Williams 1990).

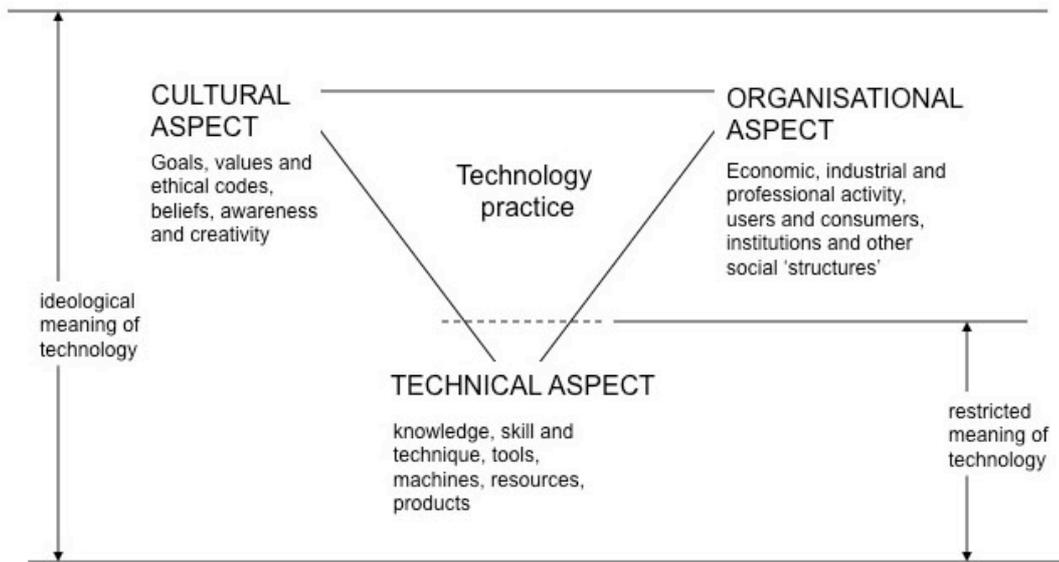
Educational institutions provide a salutary example of Edgerton's critique of pervasive futurology. Schools are awash with technologically deterministic discourses about the potential of new technologies to transform learning and reinvent schools. Lewis

Perelman (1993), for example, argues that schools should be replaced in favour of 'hyperlearning' which would enable 'virtually anyone ... to learn anything ... anywhere, anytime' (p. 23). He rejects the idea of school reform, arguing that this would not adequately tune in schools and students to the 'new technological revolution' and 'knowledge-age economy' (p. 20). Instead, he mixes futurist techno-rhetoric with an over-zealous and misguided belief in the power of neoliberal privatisation of schools (cf Negroponete 1995). Perelman's criticisms of traditional schooling are worth consideration, but his rhetoric about technology-induced transformed learning is more science fiction than science and is characteristic of the ahistoric and uncritical boosterism resulting from the collision between schools and technology promoters (cf Buckingham 2007) (see also 1.2).

This social and historical perspective on 'questions concerning technology' (cf Heidegger 1977) is taken further by Arnold Pacey (1983), who argues that the idea of technology is plagued by definition problems. He notes that talk about technology mostly refers to technical aspects: tools, machines, products, but also skills and techniques (see also Lankshear and Snyder 2000). Pacey calls this usage of the word technology 'restricted' because it ignores organisational and cultural aspects of what he calls 'technology-practice' (see fig 3.1). The notion of technology-practice rejects the idea of technology as a neutral tool and foregrounds technical, organisational and cultural elements, thereby asserting a more complex understanding of technology.

Pacey uses the distinction between medical-practice and medical-science as an example (pp. 3-4). The term medical-practice is useful because it draws attention to neglected social and cultural aspects of medical work. Examples include a doctor's sense of vocation, personal values and satisfactions, ethical codes of the profession, differences in bedside manner, even the values that underpin different philosophical approaches to healthcare as such in 'hospital care' or 'community health'. These aspects are often invisible in restricted and technical notions of medicine or medical-science but play a key role in how medicine is practised and experienced by professionals and patients.

FIGURE 3.1 Technology-practice model (Pacey 1983)



This work offers a critical perspective on technology use in schools. For example, while viewing technology as a tool for the cost-efficient delivery of learning is seductive, it ignores how technologies are tied into organisational and cultural dimensions of institutions and thereby into broader historical, political and economic networks. While the provision of technologies is important—having enough machines is an advantage—the number of machines a school can boast about in promotional material is less important than a timetabling system that enables students and teachers regular access to rooms where technologies are kept. Pacey’s model, with its insistence on attention to organisational and cultural dimensions, suggests many aspects of the technology situation in schools which are rarely addressed, the difference between access and use being only one example. Getting students and teachers regular access to new technologies is one challenge; finding educationally useful things to do is quite another. The kind of solutions that might be found to challenges such as these reveal much about values and attitudes towards technology use in schools.

Pacey’s work helps draw together critical perspectives on literacy and technology (cf Lankshear and Snyder 2000). Just as it is useful to see literacy as a set of social and cultural practices rather than as a set of autonomous, transferable skills (cf 2.2), it is also generative to view technology in the same way. Both are collections, coordinations and associations of practices bound up in complex heterogeneous networks of actors, human and otherwise (cf Gee 1997; Latour 2005; Woolgar 2002).

Andrew Feenberg (1991, 1999, 2002) extends Edgerton and Pacey's critiques of the curious absence of social and historical imagination in many accounts of technology and identifies two common views of technology which he calls *instrumental* and *substantive* theories. Feenberg's characterisation of these theories offers a useful frame for analysing discourses about technology. Instrumental theory is a widely accepted view of technology based on the idea that technologies are tools 'standing ready to serve the purposes of their users' (1991: 5). In this view, technologies are 'without valuative content' (p. 5), making them subservient to values from other social spheres such as politics or business. This neutrality is manifest in a number of specific ways where, for instance, technologies are 'indifferent' and remain 'only contingently related' (p. 5) to the values, goals and politics of those who develop and employ them. In other words, instrumental theories view technology as the sum of neutral tools, a 'pure instrumentality' used to perform functions on behalf of users.

Substantive theory, on the other hand, abandons the view that technology is neutral for an altogether more critical and pessimistic view of the inevitable forward march or 'expansive dynamic' (2002: 7) of modern technological societies. Substantive theory 'attributes an autonomous cultural force to technology that overrides all traditional or competing values' (p. 5). In substantive theories, the notion of tradition is set against modernity and the technological rationality and measures of efficiency with which the modern technological mindset is associated. The only 'choice' offered by substantive theories of technology is the eventual and complete technologising of all aspects of life and society or a radical return to simplicity, tradition and 'real' human values without machine influence (cf Dreyfus 1995; Ellul 1964; Heidegger 1977; Marcuse 1964). The idea that advanced technological progress represents a kind of soulless 'degradation of man' (Feenberg 2002: 7) is a common theme in classic dystopic literature (eg Yevgeny Zamyatin's [1921/1999] *We* and George Orwell's [1949] *Nineteen eighty-four*). Substantive theories describe a view of the *substantive* influence, impact or weight of technologies. But rather than give technologies a will and power to dominate, Feenberg notes: 'The issue is not that machines have "taken over," but that in choosing to use them we make many unwitting commitments. Technology is not simply a means but has become a way of life' (p. 7-8).

Tensions which exist over appropriate media and technology use in some homes illustrate these two theories (see also 1.2). Substantive theorists might look on the introduction of various technologies into the home—television, the internet, gaming

consoles—as having unintended and negative consequences for family life. Rituals and routines, such as the evening meal, often change to incorporate new technologies (eg eating in front of the television rather than together at a shared table). Changes in interactions between household members, the social rules around new media use and the conflicts and tensions that can develop are all regularly used as evidence of the negative consequences of the technologising of home and family. An instrumentalist might reply that carefully monitored use of the internet by young people can be an advantage in their schooling by giving them access to information and other services. Such views tend to treat the presence of technology in the home as an add-on to existing practice and take a simple view of what technology use might actually involve, ie *use* as ‘navigating’ around the internet to retrieve information.

Feenberg does more than identify these two theories or discourses of technology and critique their limitations for realising a democratic technological society. In response to the shortcomings of existing efforts to ‘reform’ technology, he proposes a third approach to technology that steers a path ‘between resignation and utopia’ (2002: 13). Taking what is most useful from instrumental and substantive theories, he frames a critical theory of technology. Feenberg’s theory rejects the neutrality of technology and the idea that technologies can simply be put to use building a better society and also questions the determinism of substantive theories asserting an inevitable technological take-over and the emergence of a Huxleyesque *Brave new world*. Recognising the potential uses and problems with both these positions, Feenberg’s theory takes a more critical and reflexive approach. The problem is not chiefly that technologies themselves are responsible for the challenges faced by modern societies, but that ‘the degradation of labor, education, and the environment is rooted not in technology *per se* but in the antidemocratic values that govern technological development’ (p. 3). At its core, a critical theory of technology is about more than critique; it is about alternatives.

Discussions of technology and literacy must be grounded in a critical-historical perspective that views technology, not as a neutral tool or a dehumanising menace, but as a complex means and activity, a phenomenon, a mindset and a site of struggle between different cultural, technical, moral and political alternatives. A critical theory of technology provides an alternative way of imagining the role, or proposed role, of technology in education and in the everyday lives of young people—and a clearer view of the challenges that educators face as they wrestle with questions concerning new technologies and ‘new literacies’—a view beyond resignation and utopia. The critical

perspective developed here highlights a number of challenges evident in school reform efforts related to new technologies. These challenges are linked to the instrumental and substantive discourses described earlier: technology-as-saviour and technology-as-catastrophe (see 1.2). Several general observations can be made about these challenges.

Remediating old and new technologies

Despite appearances to the contrary, new technologies and schools have a long history: computers were not the first technologies to be used in schools and will not be the last. School slates and chalkboards, ink, nibs and ballpoint pens, dictaphones and phonographs, radio, mimeograph copiers, slide rulers and calculators, film and television, overhead projectors, video and DVD, computers and the internet, mobile phones and music players—all have been viewed in their time as new, as potential instructional devices and potential management problems (cf Cuban 1986). The evidence of past attempts to technologise learning litter many schools, standing side-by-side as they do with newer technologies: mimeograph copiers gather dust in the corner of modern photocopy rooms; audio and video cassettes compete for shelf space alongside DVD libraries of the same films; overhead transparencies are projected onto blackboards in rooms that also contain data projectors; students carry textbooks along with digital storage devices capable of holding many thousands of books. The challenge is understanding how old and new technologies coexist and interact in complex ways.

Jay Bolter and Richard Grusin (1999) argue that all media achieve their cultural significance by paying homage to, rivalling and refashioning earlier media. They call this process *remediation* and offer a theory which explains the complex ways old and new media interact (cf Williams 1990). The theory of remediation shows how technological hype ignores the socially and historically situated nature of technological development: photography remediated painting; film remediated stage production and photography; and television remediated film, vaudeville and radio. Manuel Castells (1996) makes a similar point when he explains how different media borrow codes from each other so that 'interactive educational programs look like video games; newscasts are constructed as audiovisual shows; trial cases are broadcast as soap operas; pop music is composed for MTV' (p. 371). Extending the idea of remediation, the 'new literacies' associated with the use of new technologies do not represent a clean break with the past; instead, old and new practices interact in far more complex ways, more

often producing hybrids than wholly new technologies and practices (cf Edgerton 2007; Latour 1993). These insights are important for the current study: remediation encourages a critical view of claims to uniqueness and looks for continuities with the past as well as for innovations.

An add-on sensibility or 'integrating ICT into the curriculum'

In schools, hype about transformed and democratic learning rarely squares with the reality. For all the claims made on behalf of new technologies—and for all the billions spent each year just in Australia, the US and the UK on the latest technology—sustained change is difficult to find (cf Cuban 1986, 2001; Lankshear and Snyder 2000; Oppenheimer 2003). While there are examples of change in classrooms (cf Kist 2005; Pflaum 2004), school and system-wide change has proven more elusive. Studies of new technologies in schools have found a more complex picture of how changes with new technologies are playing out: disadvantage and inequity across social class, culture and gender lines (eg Becker 2000; Cooper and Weaver 2003; Monroe 2004; Norris 2001; North, Snyder and Bulfin 2008; Warschauer 2003), wide variations in support for change at the local level (eg Pegg, Reading and Williams 2007) and increasing corporatisation (Buckingham 2007; Robertson 1998; Selwyn 2002; Snyder 1999). These challenges complicate reform efforts.

A useful perspective on the way schools tend to approach these vexing challenges is provided by Chris Bigum and his colleagues in their work on 'knowledge producing schools' (Bigum 2002, 2004; Lankshear and Knobel 2004a; Rowan and Bigum 2005). Bigum argues that schools typically approach new technologies with an 'information and delivery' mindset, a reductive 'design sensibility' which tends to domesticate or *school* new technologies rather than employ them as part of wider social and cultural practices linked to activities out-of-school:

While it may sound a little harsh, it is nevertheless possible to argue that schools have historically been in the business of finding educationally useful things to do with the CCT [computing and communications technology] products sold to them by various corporations. In this context, 'quality' has commonly been associated with such things as the quantity of 'educational technologies' found within a setting, or with evidence that these technologies are actually being used by teachers with students. There is no need, within this mindset, to identify the ways technologies are used, the educational patterns of success and failure that they do or do not engage with, nor the possibilities that the use of CCTs may actually reproduce patterns of educational disadvantage. (Rowan and Bigum 2005: 29)

When operating within this mindset, schools appropriate new technologies for doing things as schools have traditionally done them, or imagine that purchasing more technologies will solve their technical, organisational or educational challenges. As an alternative, Bigum and his colleagues follow Michael Schrage (1997) in developing a relationship-based design sensibility. This shifts the focus from how to 'integrate' ICT into the curriculum (how to add technology to what already exists) toward more productive views of schools as socio-technical organisations that are implicated in educative work *alongside* the work done in homes, local communities, other schools and government. This move puts relationships first and technologies in the service of the main game: learning (cf Lankshear and Snyder 2000).

Disembedding schools, new technologies and literacies

Many of the challenges schools face in relation to new technologies and new literacies arise from simplistic, uncritical and ahistoric views of their relationship. There are two broad issues to consider: the highly conservative nature of schooling, and the tendency to consider schools, new technologies and literacy as isolated from social and political change. As I have already argued, a critical perspective on literacy and new technologies views them as part of larger networks, each with a biography and history.

The first issue—the highly conservative nature of schools—is partly explained by what Lankshear and Knobel (2003) call the *deep grammar* of schooling. This deep grammar 'constructs learning as teacher-centred and curricular' (p. 31). As Lankshear and Knobel argue:

This logic can be seen as a specific instance of a much larger phenomenon: the systematic separation of (school) learning from participation in "mature" (insider) versions of Discourses which are part of our life trajectories. (p. 31)

This deep grammar of schooling is 'embedded in ... administrative systems, policy development, curriculum and syllabus development, systemic planning and the like, as well as in its daily enactment with classroom routines and relations' (p. 33). These systems, structures and normalised ways of doing, thinking and being are a hidden curriculum (cf Gatto 1992) that preserves the status quo rather than encouraging innovation. Their logic is part of the institutional fibre of schooling and means school systems are stubbornly resistant to change despite the goodwill and efforts of teachers,

administrators and others (cf Gee 2004). This does not mean that change does not or cannot happen regularly; only that there are limits to the kinds of changes that can be made within present structures, and to who gets to decide what changes can be made.

The idea of a structural deep grammar separating learning in everyday life from that of school has important resonances with the critiques of technological and social determinism discussed above (eg Edgerton 2007; Feenberg 2002; Pacey 1983). This work critiques discourses that construct technology as a world apart, something disconnected, or disembedded from history and from political life. Instead, those who favour critical perspectives on technology argue for a broader view of technology and the networks of relationships that constitute technological process. Discourses about schools, literacies and new technologies are often similar in that school notions of literacy are reified and isolated from the universe of other literate practices young (and old) people employ across the different domains of life. New Literacy Studies research, for example, challenges this disaggregating tendency and attempts to connect the literate lives of young people outside of school to activities within schools (eg Hull and Schultz 2002; Marhiri 2004; Street 2005) (see also chapter two). The research on literacy and technology is similar. The critical perspectives reviewed above encourage a more careful examination of the complex relationship between literacy in schools and classrooms and literacy and technology practice outside of schools. The current study takes up this challenge by investigating how literacy and technology practices are negotiated across school and home domains (see chapters six, seven and eight).

The second issue here—the tendency to consider schools, new technologies and literacies as isolated or disconnected from broader issues—adds to the challenge of doing literacy and technology in schools. There is little doubt that schools, curriculum and the lives of young people and teachers occupy heavily contested ground (cf Snyder 2008). Pressures to technologise schools coincide with other social and political developments (see 1.2). For instance, on the one hand, schools are under pressure to produce future citizen-workers to meet the challenges of a globalised world. The technology-as-saviour discourse calls for new ‘forward-looking’ curriculums appropriate for workers in these new economies (what kinds of work is usually unclear). On the other hand, taking a lead from the technology-as-catastrophe discourse, in reaction to hyped up rhetoric about global futures, but also to perceptions of widespread school failure, there is a clamour for the nostalgic certainty of back-to-basics curricula reinforced by standardised assessment regimes. These challenges are

linked to a wider policy environment of increasing accountability. Such environments have been shown to lead to the erosion of teachers' professional autonomy and to the undermining of confidence in public schooling (cf Doecke, Howie and Sawyer 2006). So how are schools and teachers to respond to these challenges and contradictory discourses? Some help is provided by a critical-historical perspective on technology. Two points summarise the discussion thus far:

- Many of the discourses used in relation to literacy and technology are restricted and narrowly technicist (Pacey 1983), innovation-centric rather than use-centred (Edgerton 2007) and deterministic (or instrumental) and ahistoric (Feenberg 2002).
- As such, the focus is on new technologies or literacies as tools disembodied from social and cultural practices and as add-ons to existing ways of operating. This promotes an uncritical view of their place in the complex network of relationships that constitute schools and school systems.

Accordingly, approaches to literacy and new technologies in schools need to be reframed from a critical perspective. Doing so highlights the non-neutrality of literacies and technologies and broadens understanding of these complex phenomena to include socio-historical, political and technical domains. Importantly, employing a critical perspective on technology and literacy suggests that there are alternatives to the present and to the systems teachers are obliged to work within; that the conception, development, design, deployment and use of new technologies in schools should always be a focus of debate. This is not to ignore the challenges of realising such alternatives and of claiming and making such choices—as if this were a simple matter of choosing to do one thing or another—but a realisation that the exercise of agency, while constrained by 'structuring structures' (Bourdieu 1990), is nevertheless available to literacy education and to young people in schools, as shown in the previous chapter (see 2.3 and 2.4). In the next section, I discuss early research directed at literacy and technology.

3.2 Literacy and technology studies: early development

In this section, I consider the development of literacy and technology studies from the late 1970s to the mid 1990s by examining two research strands: research on word processing and research on hypertext. These antecedents provide a theoretical legacy for later work (the mid 1990s to the turn of the century) and have much in common with the New Literacy Studies (see chapter two). I examine this work to foreground the importance of a critical-historical view of the relationship between schools and new technologies (see 3.1). Viewing contemporary claims about new technologies from a critical-historical perspective helps researchers and practitioners discern the hype from the real potential and avoid the ‘historical amnesia’ (Selwyn 2002) that often clouds claims about the power of technology to change schools and transform literacy practice and achievement. Before examining these two strands of literacy and technology research, I provide a brief account of the early days of computers in schools.

Computers in schools: the early years

Before the mid 1970s computer subcultures were largely the domain of programmers, hackers and those involved in research into artificial intelligence (cf Gere 2002; Turkle 1984), but since the early 1980s popular interest in computers has increased in many developed countries. Since the early 1980s growing interest in computers and new technologies has also been a feature of mainstream education in these same countries. With personal microcomputers available in more workplaces and homes, schools have also felt the push and pull of educational computing discourses in government policy, computer industry advertising and in the broadcast and print media (Selwyn 2002). The stories of computers and other new technologies in schools were dominated by two major challenges: getting access to technologies and using them in effective ways—or resourcing and pedagogy.

Resourcing was a key issue in the early days of school computing and continues to be a significant challenge and policy focus (eg DEEWR 2008). Throughout the 1980s and 1990s governments in Australia, the United States and United Kingdom spent billions on hardware provision for schools, a trend which continues today. In Australia, for example, surveys from the early 1980s indicate one computer per 10 schools; by 1985 the situation had improved to an average of eight computers per school (Bigum 1990; Durrant 2001). In the UK, the situation was similar with the student-computer ratio

improving from 60:1 in 1985 to 28:1 in 1989 (Wellington 1990). In the US, during the late 1980s, a major government report presented a picture of steadily increasing numbers of machines. In 1981 fewer than one-in-five schools had a computer; by 1983 the US national average was one computer for 100 students and by 1988 it was one computer per 30 students (US Congress, Office of Technology Assessment [OTA] 1988). Such reports and research suggest that a primary interest of policy makers and educational leaders, at least early on, was to increase computer numbers in schools. In a compelling review of the UK scene during the 1980s, Neil Selwyn (2002) describes the complex competing agendas at work in policy making for educational computing:

As a site of power, educational computing was clearly configured by a host of actors intent on pursuing primarily non-educational goals behind apparently educational aims. Thus, the notion of the computer as a powerful home tutor or tool to modernise schools gradually became an accepted part of the “information revolution” discourse during the 1980s regardless of government or industry’s prime motivations. (p. 439)

Selwyn argues that the UK government’s motivations in pursuing the early technologising of schools included an ‘uneasy combination of economic, industrial and educational motivations’ (p. 440): stimulating a flagging economy, propping up a fledgling computer industry and giving impetus to reforms for a ‘failing’ UK education system. Research in the US suggested that policy focused on resourcing tended to ignore important challenges such as classroom use and professional development (US Congress, OTA 1995). The study found that while computer numbers had increased markedly ‘a substantial number of teachers report[ed] little or no use of computers for instruction’ (p. 1). The report argued that while significant progress had been made in helping teachers use basic technological tools (eg word processing and databases) they ‘still struggle with integrating technology into the curriculum’ (p. 2). Findings such as these are confirmed by work in the UK and Australia (eg Lankshear and Snyder 2000; Meredyth, Russell, Blackwood, Thomas and Wise 1999; Selwyn 1999). On this same point, Bigum (1993) is rather more blunt:

It is fair to say that during this time [since the 1980s] the prime concern of schools and school systems has been to come to terms with computers, to be seen to be doing something, almost anything, as long as computers were involved. (p. 81)

Bigum suggests that while resourcing remains an ever-present challenge for schools, how new technologies are used in teaching and learning programs has been a more significant challenge and source of anxiety. In the next two sections, I discuss research

examining computers and writing and hypertext for two reasons. First, this research offers an example of how researchers and practitioners have grappled with the challenge of pedagogy in relation to new technologies in schools—largely in the absence of large-scale financial support from governments. Second, while there are other research areas which help establish the field of literacy and technology studies, these two are indicative of important developments, contributions and trajectories—especially in their move to the social which foreshadows later literacy and technology research. These same trends are evident in the NLS (see chapter two) and in related fields (cf Gee 2000). The research directions highlight, again, the importance of a critical-historical perspective (see 3.1)—sometimes by the absence of such a perspective and sometimes by the ways they have been challenged by the limits of popular theoretical frameworks.

Writing with computers

Concurrent with an increase of computers in schools were concerns about their effect or impact on reading and writing. Subsequent interest in research on computers and writing was fuelled partly by accounts from professional writers who had begun composing on word processors in the late 1970s and early 1980s (Cochran-Smith 1991; Snyder 1990). These writers and teachers wrote enthusiastically about the possibilities of word processing for improving writing processes and products (eg Murray 1985; Zinsler 1983). Tempering this enthusiasm were critical accounts of the challenges new technologies posed for writing and teaching writing (eg Collins and Sommers 1985; Hawisher and Selfe 1989). The increasing availability of personal microcomputers and aggressive marketing by technology companies, hyping the value of computers for learning, also helped encourage English/literacy teachers, in tertiary, secondary and primary settings, to experiment with word processing in their classes (eg Bradley 1982; Hawisher 1987; Snyder 1993).

In addition to the testimonials of writers and the hard sell of computer promoters, other beliefs fuelled English teachers' interests. Marilyn Cochran-Smith (1991) identifies two basic arguments used by early adopters: that word processing enabled writers to do what they had always done but more easily, and that word processing was 'a tool that could help change the nature of the composing process' making for a 'qualitatively different writing process' (p. 111). From these broad concerns with teaching students how to write 'better' followed a range of related interests. In the

literature these focus on three related areas (Bangert-Drowns 1993; Cochran-Smith 1991; Snyder 1993): (1) word processing and the writing *process* (2) the inevitable interest in the quality of written *products* produced through word processing and (3) the effects of word processing and computing on social processes in classrooms. Snyder (1993) summarises these concerns as: process, product and context. The first two areas are closely related and privilege the individual writer. The third area represents a shift to a more social and cultural perspective, following the social turn in the social sciences.

Research examining the first two areas—process and product—looked at the impact of word processing on elements including text editing and length, motivation, language mechanics, collaboration and feedback. In a meta-analysis, Robert Bangert-Drowns (1993) found some correlation between the use of word processing and changes in writing processes: in the length of texts produced, for example. There was also evidence that word processing had the potential to help writers produce marginally better texts, but much of this evidence is equivocal. Research in these first two areas drew on notions of literacy conceived largely in psychological terms, treating knowledge and skills as individual cognitive processes, directing attention to individual behaviours and to explanations of phenomena that privilege individual action (see 2.1 and 2.2). These studies often employed quasi-experimental, pre- and post-test research designs to measure the *impact* of word processing (Snyder 1990). Many of these studies were also grounded in deterministic views about the interaction of technology and social practices—in Pacey's terms, a restricted view of technology (Pacey 1983) (see 3.1 and fig 3.1). These psychologistic and deterministic views are evident in the desire to measure the impact of word processing on writing. Such notions posit a causal link between the application of a technical fix (eg a computer or piece of software) and the resolution of a problem (poor writing skills) and tend to favour research, policy and pedagogical approaches not able to take account of the complexity of social and cultural phenomena.

The third area of research signals a move from a focus on impact and individual writing processes and products to a concern for how computing functions in particular classroom contexts (eg Cochran-Smith, Paris and Kahn 1991; Eldred 1989; Hawisher and Selfe 1989). Studies taking a social approach explored how computers interacted with the social, cultural and political contours of classroom life, a perspective underpinned by social and cultural theories of language and classroom interaction (cf

Cazden 1988; Gee 1990; Hymes 1974; Mehan 1979) (see chapter two). When seen from this theoretical perspective, Cochran-Smith (1991) argues that classroom computing must be:

Viewed as neither cause nor effect of classroom processes ... but as something that interacts with the social processes of classrooms—with the cultures of teaching and schools, people, conditions of learning, and teachers' and children's goals over time ... the different life worlds of classrooms establish different conditions for learning and hence different opportunities for teachers and children to learn, even when they are using the same computer technology. (p. 109)

This increased sensitivity to the social setting in which computers were used did not mean the end of grand claims made on behalf of new technologies. For example, research exploring computer-mediated communication (CMC) argued that student-centred, democratic learning was more easily achieved in networked environments (cf Sandholz, Ringstaff and Dwyer 1997). Despite the stubborn persistence of such claims, there was a growing recognition amongst some researchers that computers in classrooms appeared 'unlikely to negate the powerful influence of the differential socialisation of students by social class and its effects on their success or failure in school' (Herrmann 1987: 86) (see also Hawisher and Selfe 1991; LeBlanc 1994; Selfe and Hilligoss 1994). Overall, research on computers and writing remains valuable because it helped demonstrate the importance of applying a social perspective to new technologies and literacy learning in schools (Snyder and Bulfin 2008).

Hypertext

If the take up of word processing by writers, researchers and teachers focused interest on the impact of new technologies on writing, the development of popular hypertext systems turned attention to the impact on reading. Like research on computers and writing, work on hypertext provides theoretical grounding for later developments in literacy and technology studies. Simply stated, hypertext has three key characteristics: multiple reading paths, chunked text (including images and sound) and some kind of electronic linking mechanism (Hayles 2002; Snyder and Bulfin 2007). Two major claims have been made for hypertext in relation to language and communication. First, that hypertext has altered the nature of reading and writing, and second, that this change has implications for wider social and cultural practices, for example, changes to cognition associated with different reading practices, changes in how knowledge is understood, stored, accessed and experienced and changes to traditional modes of

textual authority. Despite claims of this type being deterministic (see 3.4), new technologies do seem to offer *prima facie* evidence of changes to reading and writing practices. The ability to support such claims has proved more difficult.

In terms of education, claims have been made about the potential of hypertext to improve teaching and learning generally (eg Landow 1992) with students encouraged to be 'self-directed learners' actively shaping their knowledge. Using hypertext in schools, it was claimed, would breakdown disciplinary boundaries (Lanham 1989), promote associative thinking, encourage collaborative learning (Conway 1995) and improve students' abilities to synthesise material from different sources (Palumbo and Prater 1993). Because hypertext could be used to author texts that appeared to be nonlinear, some hoped this might lead to the disruption of traditional authority in texts and classrooms and encourage critical thinking (Moran 1990; Myers, Hammett and McKillop 1998; Neilsen 1998). Others found that writing interactive fiction heightened students' sensitivity to narrative features such as point of view and causal sequencing (Kaplan and Moulthrop 1991). Interactive fiction seemed to help integrate an enriched experience of literature with the practice of writing enabling students to become perceptive interpreters of fiction and also creators of it (Moulthrop and Kaplan 1994; Snyder and Bulfin 2007).

Today many of these claims appear overly idealistic. While hypertext offered some writers new ways of engaging with ideas about textuality, it represents another false technological hope in efforts at school reform. The claims of democratic, transformed learning have not eventuated. The popularisation of the internet from the late 1990s onward has also meant that hypertext, rather than remaining a focal point, has become a smaller part of much bigger systems such as the world wide web. So while hypertext technologies are widely used, they have become a naturalised part of online experience (Bruce and Hogan 1998; Burbules 1997). This tendency for technologies to become invisible highlights again the need for a critical-historical perspective on technology, schools and literacy, one that has often been absent from, or buried, in much of the research in these two areas (see 3.1).

The research on computers and writing and hypertext represents first generation studies in literacy and technology—that is, early attempts at working through the connections between communication practices and technologies. This research is also indicative of the challenges researchers and teachers have had with technologies

through much of the 20th century (cf Cuban 1986): futurism and hype; a focus on the technical; an uncritical, deterministic approach to technologies; and the lack of well-theorised pedagogical models for teaching with and through technologies. Despite the difficulty of these challenges, this research helped develop a view of technology use in schools as social and cultural as well as technical, but often stopped short of a harder-edged critique premised on a historical view of the relationships between schools and new technologies (eg Buckingham 2007; Cuban 1986, 2001; Marvin 1986; Selwyn 2002) (see also 3.1). Although this view of the social and cultural aspects of new technologies has been influential in the development of studies in literacy and technology, the tension between the sociocultural and the technological is still played out in current research (eg Lankshear and Knobel 2007a) (see also 3.3 and 3.4).

3.3 Technologising literacy studies in the 1990s

In the mid-to-late 1990s, the development and popularisation of the internet and the world wide web signalled an intensification of research around literacy and technology. In this section, I examine this research which consolidates earlier work and which develops stronger theoretical and critical perspectives on the relationship between literacy, technology and learning. First, I discuss examples which indicate some of the variety of work grouped loosely as literacy and technology studies during this time. Second, I examine key edited collections from the mid-to-late 1990s, identifying persisting preoccupations within the field and reviewing these in light of current research directions.

Since the mid 1990s researchers have increasingly applied social perspectives to understand literacy (see chapter two) and technology-mediated communication practices. This meant that researchers were more commonly working with expanded notions of literacy and a growing recognition that the political and social dimensions of both literacy and technology could not be ignored (cf Bigum and Green 1993; Green 1993; Muffoletto and Knupfer 1993; Selfe and Selfe 1994). Scholars also argued that the convergence of traditional media modes (writing, speech and image) in modern media culture largely through new technologies created a semiotic environment where new understandings of literacy and communicative practice were needed (cf Kress and van Leeuwen 1996; Kress 1997a; Lankshear 1997; Lemke 1998; New London Group 1996; Snyder 1997a). Studies during this time helped establish theoretical positions which

have since become commonplace in more recent research. These include a recognition of the:

- close relationship between literacy, technology and learning
- significant implications for literacy and school education of the convergence of communicative modes, modern media culture and new technologies
- value of out-of-school social and cultural practices.

These insights are indicative of theoretical trajectories common across social studies of literacy, technology and schooling, including the New Literacy Studies. Mid-to-late 1990s studies of literacy and technology might be thought of as ‘second generation’ studies (cf Baynham 2004) coming, as they do, after ‘first generation’ work in word processing and hypertext. Researchers commonly drew on the central tenets of a social approach to the study of literacy while also contributing to the development of the social approach in relation to computer technologies. A number of important studies emerged out of the mid-1990s, both large- and small-scale. Larger studies tended to focus on patterns of literacy and technology use across different school communities, smaller studies on language and semiotic practices required or encouraged by digital texts. Two studies are discussed here as indicative: one is empirical, the other more conceptual.

The large-scale *Digital rhetorics* study (Lankshear et al 1997; Lankshear and Snyder 2000) examined relationships between theory, policy and practice in schools and exemplifies research informed by an understanding of literacy and technology as social practices (cf Comber and Green 1999; Meredyth et al 1999). Conducted during 1995-1996, it investigated the interface between new technologies, literacy and learning in 11 diverse Australian schools and identified patterns of practice from which broader principles were developed (see Lankshear and Snyder 2000). The study adopted a number of models for theorising the relationship between literacy, technology and learning: Bill Green’s (1988) three-dimensional (3D) framework and Arnold Pacey’s (1984) model of technology-practice, discussed earlier (see 3.1).

Briefly, Green’s 3D framework ‘assert[s] a holistic, integrated view of literacy as comprising three interlocking dimensions or aspects’ (Lankshear and Snyder 2000: 30): *operational*, *cultural* and *critical*. These dimensions bring together, *language*, *meaning* and *power* respectively. A key point of the framework is that no dimension has

any priority; all need to be taken into account in an integrated approach. The operational dimension includes, but also goes beyond, competence with tools, procedures and techniques: for example, proficiency in a written language system, sending an email or watching a YouTube video. The cultural dimension recognises that literacy is more than being able to 'operate' systems; it also means knowing how to make meaning in context. Working in this dimension means meaningful participation in Discourses (Gee 1996). The critical dimension involves an awareness that all social practices (eg literacies and technologies) are socially constructed and involve relationships of power. This dimension draws attention to how individuals and groups get 'coordinated' (arranged and patterned into recognisable practices) by Discourses (cf Gee 1997).

Green's framework suggests that a focus on the operational dimension is particularly seductive because it suggests simple, cost-effective solutions to complex problems. The operational answer to the challenge of technologising learning is more computers and basic computer skills, the assumption being that more computers will lead to improved literacy, transformed learning and better future employment prospects for students. This ignores cultural and critical dimensions and questions of meaning and power. The integrated approach offered by the 3D framework, on the other hand, encourages a view of literacy and technology as implicated in relationships and contexts which have historical, cultural, social, economic, political and technological dimensions (see 3.1 and fig 3.1). The *Digital rhetorics* study found that teachers and school administrators gave little emphasis to the critical dimension. Instead, time, resource and expertise constraints faced by the schools and teachers made it difficult to move beyond the operational dimension in meaningful ways, for example, requiring students to word process their work. The study recommended a range of measures designed to improve policy in the area of literacy and technology, including that curriculum reflect operational, cultural and critical dimensions of literacy and technology practices.

Smaller-scale studies of literacy and technology conducted during the mid-to-late 1990s also contributed to conceptual understandings of literacies associated with the use of new technologies and digital texts. For example, Nick Burbules (Burbules 1997, 2002; Burbules and Callister 1996, 2000) examined how the web and other online environments are not only networked storehouses but 'rhetorical places' (Burbules 1997; cf Locke 2007). This move foregrounds a critical perspective on how language and other semiotic resources construct online environments, structure online

experience and support textual work and meaning-making. Burbules argued that hyperlinks are not simply navigational elements but are semantic connectives, 'associative relations that change, redefine, and enhance or restrict access to the information they comprise' (1997: 103). He suggests that the seamless speed at which links can transfer users from one document to another often 'makes the moment of transition too fleeting to merit reflection; the link-event becomes invisible' (p. 104). Burbules notes that 'the use and placement of links is one of the vital ways in which the tacit assumptions and values of the designer/author are manifested' (p. 105).

In place of uncritical online activity, Burbules proposed 'critical hyperreading' where links are understood as non-neutral and always intentional. Critical hyperreading asks questions such as: what rhetorical work is being done by this text and how are readers being positioned? How is this text or link related to what it points to? What associations are made and why are they being made in this way? Work like Burbules' turns a critical eye on new technologies and their associated textual forms, examining how meanings are made in ways that bring both 'received forms' (Williams 1990) and new processes together (cf Barrell and Hammett 1999; Bruce and Hogan 1998; Lankshear 1997; LeCourt 1999; Myers, Hammett and McKillop 1998).

The *Digital rhetorics* study and Burbules' research are indicative of the rich variety of work which examined connections between literacy, new technologies and learning during the mid to late 1990s. The examples discussed here are significant because they incorporate theoretical frames from literacy studies (see chapter two) and from critical work on technology (see 3.1) to inform the analysis undertaken in the current study. In the following section, rather than include a long discussion of related work, I examine two key edited collections in order to draw out the field's central themes and preoccupations. Later in the chapter, I use these themes as a framework for reviewing current research from 2000 to 2008 (see 3.4).

Mapping literacy and technology

Well conceptualised edited collections provide snapshots of research fields by highlighting key issues and marking key historical moments (cf Leander 2003). Edited collections typically include contributions that give coverage to thinking around the time of publication. In this sense, they are historical documents, partly representative of the wider field at the time. During the mid-to-late 1990s there were a number of

influential volumes which examined the relationship between literacy and new technologies, including the *Handbook of literacy and technology* (Reinking, McKenna, Labbo and Keiffer 1998) and *Page to screen* (Snyder 1997a). In this section, the main preoccupations and assumptions of each volume are examined with a view to mapping trajectories and interests into current research. While it is difficult to give a complete overview of any expanding research field, this strategy can provide a roadmap of the major moves and challenges.

Kevin Leander (2003) briefly examines the Reinking handbook, composed of chapters originally drafted for a conference in 1996. He finds that much of the research agenda charted in the book is still relevant today: changing perspectives on literacy development; the social implications of online reading and writing; equity issues; learning with new technologies and understanding forms of literacy on the internet. An analysis of Snyder's collection identifies similar issues, including a mix of excitement and caution at the possibilities of 'ICT for literacy education'. Many of the chapters in *Page to screen* grapple with the tension between newness and tradition: do new technologies require new literacies? Are young people today different in significant ways? These tensions underpin both books. For instance, in the introduction to her volume, Snyder (1997b) writes of 'increasingly rapid change' about 'what promises to be a metamorphosis' (p. xxi). This change is the move from reading the page to reading the screen. She goes on to argue:

Electronic communications and information processing technologies have reached a condition of critical mass ... the escalation of the rate of change is so spectacular that it may be that evolutionary accommodation has been rendered impossible. (p. xxi).

Despite her lapse into deterministic rhetoric about technological transformation, elsewhere Snyder adopts a discourse of restrained enthusiasm, viewing technological innovation as a mix of old and new technologies which co-exist, interact and complement each other, arguing that 'history suggests that we should remain somewhat sceptical about how the wiring of our schools might affect pedagogical practices' (pp. xxii-xxiii). Other preoccupations in this volume include: finding ways to characterise and construct useful accounts of the field (Hawisher and Selfe 1997); debates about the merits of qualitative and quantitative approaches to literacy and technology research; the connections between technology and changing semiotic practices (Kress 1997b); concerns about equity and access to technology (Moran and

Hawisher 1997). Hypertext is also a feature of a number of chapters (Burbules 1997; Douglas 1997; Snyder 1997b).

Taken together these volumes highlight key preoccupations for literacy and technology researchers during the mid to late 1990s. Many of these interests remain important research areas but now have different emphases. For example, the concern for equity and access remains a strong research theme but is more commonly couched in terms of social inclusion and exclusion and the focus is on use and practice rather than access or provision (eg Compaine 2001; Katz and Rice 2002; Norris 2001; Selwyn and Facer 2007; Solomon 2002; Warschauer 2003). Other interests represented in these volumes, such as hypertext, are not as common in current research (see 3.2).

There are five points to make about broader themes in these two volumes and how current research reviewed in the next section (see 3.4) has and has not taken up earlier interests. First, both volumes are built around the idea that literacy is changing in a 'post-typographic age' with communication moving from 'page to screen'. This challenge to literacy is framed as a transformation of *print* texts (Leander 2003). Recent research has shifted to broader notions of textuality and communicative practice involving meaning-making through multiple semiotic modes (eg Kress and van Leeuwen 2001, 2006). That is, print texts and print literacies are no longer the base from which discussions about new technologies and literacies begin. Kress' (1997b) chapter addresses these issues, linking communicative changes with others in social, cultural, economic and technological domains.

Second, with the exception of a few chapters across both volumes (Beavis 1997; Bruce and Hogan 1998; Lemke 1998; Smith and Curtin 1997; Tierney and Damarin 1998), the primary concern is with teaching and learning in school settings. Only a few chapters investigate out-of-school literacies in their own right. Exceptions are Catherine Beavis (1997), who examines computer games, but within a framework of literacy and language learning in English classrooms and Jay Lemke (1998), who calls for researchers to examine young people's participation in 'activity-centred communities' outside of schools (p. 292). From its minority position in these and other volumes, this thread of research continues to strengthen.

Third, absent from both volumes is a serious engagement with the relationship between online literacy practices and identity. Identity is picked up in a few chapters

(Johnson-Eilola 1997; Myers, Hammett and McKillop 1998; Smith and Curtin 1997; Tierney and Damarin 1998), but not in the way it has since become an intense focus of research (see 3.4). There is some mention of new technologies and online spaces (email, games etc) creating opportunities for identity play (cf Turkle 1995), but these are marginal. The recent prominence of identity as ‘an analytic lens’ (Gee 2001) relates to a number of trends. One of these is the move toward ‘eco-social’ analysis, or seeing context as not a static container but as constituted in language and social practices. These moves press researchers to reimagine events, practices, identities, texts and classrooms as the function of dynamic processes situated within ‘fields of relations’ (cf Olwig and Hastrup 1997) (see also 4.3). The recent prominence of identity has meant a shift away from a ‘fixation upon technological tools towards mapping the ecosocial systems (Lemke 1998) through which new identities are being performed’ (Leander 2003: 394). Mapping and understanding such systems means paying attention to the kinds of identities produced, encouraged and negotiated (see 3.4).

Fourth, both volumes assume a growing generational distance between technologically illiterate adults and cyberkids (see 1.2). This assumption ignores young people’s diversity and manifests in some rather odd claims. For example, the suggestion that adults should recognise the value of young people’s everyday use of new technologies, on the one hand, and, on the other, the suggestion that students will be disadvantaged if teachers don’t adopt new technologies in their teaching because of lost opportunities to learn about new technologies. These contradictory claims position young people as digital natives in need of digital knowledge, and adults as digital immigrants responsible for imparting this digital knowledge. These binaries reinforce a sense of generational difference and ignore the uneven nature of knowledge about new technologies among young people and adults (cf Snyder, Wise, North and Bulfin 2008).

Finally, in *Page to screen*, at least, a number of chapters are based on theoretical perspectives from US college composition studies (Douglas 1997; Hawisher and Selfe 1997; Johnson-Eilola 1997; Joyce 1997; Moran and Hawisher 1997). These contributors do not have a lot to say about young people in and around classrooms and schools. The result is a focus on serious hypertext fiction rather than on how young people engage with new technologies and popular digital cultures—although as noted the latter is taken up in part by Beavis (1997) and Smith and Curtin (1997). Joyce’s (1997) critique of popular culture and multimedia is interesting for how distant it seems from research contemporary to the publication of the volume (eg Alvermann,

Moon and Hagood 1999; Marsh and Millard 2000; Sefton-Green 1998) and with more current thinking about the engagement of young people with popular digital cultures (eg Buckingham and Willett 2006; Mackey 2007; Marsh and Millard 2006). Joyce and Douglas appear to have been jilted by the development of the web away from serious writing (their own craft) and into what seems to them as crass commercialism. The reality is that serious hypertext fiction has always been a boutique genre and the web was always going to replicate offline inequalities and be colonised by commercial interests (see Fabos 2004; Norris 2001).

Since the mid 1990s much of the research on literacy and technology has taken up the above tensions and themes, which can now be summarised as:

- understanding communication in multiple semiotic modes (ie multimodality)
- the significance of young people's out-of-school digital literacy practices and their engagement with popular media cultures
- the importance of online and offline spaces for identity work.

3.4 Recent research in literacy and technology: 2000-2008

Rather than attempt an exhaustive overview of current research activities and concerns, I now discuss current research in literacy and technology using three themes taken up from the previous section (see 3.3) and one additional theme. These are: (1) combining sociocultural and multimodal perspectives on literacy (2) connecting the local and global (3) new texts and new literacies and (4) identity and digital media. In the first, I examine the move to integrate multimodal and sociocultural approaches to literacy. In the second, I discuss attempts to connect situated accounts of literacy with global understandings. In the third, I outline research on young people's engagement with new technologies in- and out-of-schools, and in the fourth, I look at work on identity in online and offline spaces. The themes can be read as responses to various critiques of the field; they also represent future research directions.

In my analysis, I identify significant moves in the current research and highlight indicative examples. These themes and categories overlap and clear distinctions between them are difficult to make. In fact, the research discussed in this section can be read as a convergence of studies in literacy and technology with the New Literacy Studies around key interests in literacy, new technologies, young people and schooling.

Studies at this nexus might be seen as a 'third generation' of literacy and technology studies (cf Baynham 2004). These two related fields—the NLS and literacy and technology studies—have also converged with others, including media education (cf Buckingham 2003, 2007; Fisherkeller 2002; Jenkins, Clinton, Weigal and Robison 2006; Sefton-Green 2006) and the new social studies of childhood and youth (cf Buckingham 2000; Holloway and Valentine 2003; Lesko 2001; Maira and Soep 2005; Valentine and Holloway 2002). Each of these fields provides alternative but related approaches to the four themes discussed below.

However, before the themes are discussed some attention is given to a recent meta-review examining literacy and technology research. Richard Andrews' (2004) collection of 'systematic reviews', *The impact of ICT on literacy education*, concludes with a mixed set of findings. For some learners, ICT bring little or no improvement in educational outcomes, while other instances suggest that educational practices and learning can be made worse. While the term 'impact' might sit uneasy with some researchers, the work done by the reviewing team provides important reading because it eschews technological hype, points to areas where research might make a future contribution and recognises the significance of broader education and research policy on the kinds of research that gets funded.

For example, Andrew Burn and Jenny Leach (2004), in their review of the relationship between 'ICT and moving images', report on 12 small qualitative case studies that suggest the beneficial effects of engagement with digital media in the English/literacy classroom. Several studies found a connection between media literacy and the cultural experiences of young people, suggesting that curriculum content which recognises this factor is 'more likely to motivate high quality work, to locate learners as determiners of their own meanings, and to be aware of ways in which the developing social identities of young people are implicated with their media cultures' (p. 164). Other studies found that the incorporation of moving-image media in the curriculum led to gains in literacy broadly defined, in some cases specific gains in print literacy. In addition, Terry Locke and Andrews (2004) found that ICT can positively affect social interaction among learners in the context of literature-related literacies—but probably because new technologies are mediated by teachers. A similar conclusion is reached for learners of English as a second language (ESL) (Low and Beverton 2004). English/literacy acquisition was enhanced when the use of new technologies had a specific and identifiable pedagogical function.

As a caution against unthinking technological optimism, Andrews concludes the collection proposing that rigorously designed randomised trials should precede further investments in new technologies for literacy education. This suggestion, while politically strategic, also demonstrates a key tension in the current policy and research environments. On the one hand, policy moves towards the funding of research favouring psychological and cognitive perspectives on language, literacy and learning, often with quite narrow definitions about what constitutes scientific 'evidence' (cf Feuer, Towne and Shavelson 2002) and, on the other, the possibility of a future research landscape where both social and cognitive perspectives on literacy and technology are considered together. The complex situated nature of literacy has made it difficult to show causal relationships between the acquisition of literacy and gains in other skills (cf Graff 1979; Street 1988, 1995, 2000), nevertheless, both research perspectives have much to offer different audiences.

Integrating sociocultural and multimodal approaches to literacy

The first major theme or preoccupation of recent research has been the convergence of a social perspective on literacy with multimodality. As noted in the previous section, notions of literacy have broadened to include a multiplicity of texts and modes of communication. Theoretical accounts of multimodality have been available since the early 1990s (eg Kress and van Leeuwen 1990) and increasingly so throughout that decade (Kress 1997a; Kress and van Leeuwen 1996; New London Group 1996; van Leeuwen 1999). New and remediating text types, language practices and social formations have emerged as people use mobile phones, text and instant messaging, the internet, online games, blogs, search engines, e-mail, peer-to-peer technologies, social networking, digital video, music, imaging and more. Working with texts produced through these communication practices requires different understandings of layout, design, interactivity and how meanings are made in various modes and media. Finding the language to talk about these practices, discerning how meanings are made with them and examining how multimodal texts function in school environments is a preoccupation of current research in this area (cf Kress 2003; Jewitt 2002, 2005, 2008; Jewitt and Kress 2003; Matthewman, Blight and Davies 2004). Much of the current research in literacy and technology now takes multimodality as an essential feature of the contemporary communications landscape and combines these understandings to strengthen analyses of literacy and technology practices.

More recently, there has been increased effort to bring multimodality together with social perspectives on literacy. In their edited collection, *Travel notes from the new literacy studies* (2006a), Kate Pahl and Jennifer Rowsell observe 'theoretical lacunae' (2006b: 1) in the research between multimodal semiotic accounts of communication and social accounts of literacy. Despite this gap, they argue that researchers from both perspectives, and those who work across these perspectives:

have a common understanding of literacy as a social practice with an eye to the impact of new communicational systems on how we make meaning ... [and so in order] to more forward we need to mediate social practice with communicational networks to have an informed perspective on contemporary literacy education. (p. 1)

Similarly, Kress (2003) argues that in studies of literacy and technology issues of multimodality are more readily foregrounded than with traditional print literacies. The research in Pahl and Rowsell's collection focuses on complementarity between the two perspectives and how, when used together, they offer advantages not available separately. For example, a multimodal perspective applied to the NLS ensures that texts are seen as material objects and provides analytical tools for understanding artefacts such as children's drawings or young people's multimedia presentations and MySpace profiles. A NLS perspective, on the other hand, helps link artefacts and representations to particular social practices within particular sites, all of which have a history and are situated in broader contexts. This anchoring helps avoid the tendency in multimodal analysis to essentialise visual or linguistic forms by 'giving an ideological quality to multimodality' (Pahl and Rowsell 2006b: 9). The combined multimodal-social theory of literacy perspective is useful because it creates the opportunity for ethnographies of literacy to account for how new technologies mediate literacy practices in contemporary society. In addition to the focus on multimodality, a number of contributors to Pahl and Rowsell's collection provide useful ethnographic accounts of literacy that also make connections between the local and the global (eg Davies 2006a; Rowsell 2006). Indeed, these studies show how 'it is impossible to describe local literacies without attention to global contexts' (Pahl and Rowsell 2006b: 5) This leads to the second theme and preoccupation in recent research.

Connecting the local and the global

Recent research has argued that processes of globalisation, combined with new communications technologies, have increased opportunities for individual and community engagement in widening circles, outside of what has traditionally been seen as the 'local' (Appadurai 1996; Bauman 2000; Lam 2006; Rizvi 2006). Allan Luke (2004) argues that cultural and economic globalisation have altered the empirical and theoretical backdrop against which studies of literacy and technology must now take place, whether through the complexities of 'the push/pull processes of glocalised literacy,' the 'impacts of mass media on local cultures and modalities of expression, or through the reorganisation of literate and textual work and the blending of discourses' (p. 332) (cf Luke and Carrington 2003).

Within this context, Luke (2004) suggests that studies of local literacies—'while an important corrective to autonomous models that over generalise the deterministic power and consequences of literacy' (p. 332)—need to engage with how the local is constituted in relation to the flows of globalisation (cf Baynham 2004; Collins and Blot 2003; Lewis, Enciso and Moje 2007). When this critique is extended to the research methodologies appropriate for these changed environments, a serious reframing of literacy research is needed to handle not just the development of deep understandings of local cultures, but also how local cultures are negotiated in dialogic relationship with 'the global' (cf Hagood 2003; Luke 2003; Nixon 2003) (see also 4.2).

This critique of the situated approach to literacy research is extended by Deborah Brandt and Katie Clinton (Brandt and Clinton 2002). Writing about the 'limits of the local', they ask whether the situated literacy perspective:

sometimes veers too far in a reactive direction, exaggerating the power of local contexts to set or reveal the forms and meanings that literacy takes ... if reading and writing are means by which people reach—and are reached by—other contexts, then more is going on locally than just local practice. (p. 338)

In order to 'trace this theoretical blindspot' (p. 337), Brandt and Clinton reexamine the material dimensions of literacy, where literacy is seen as a technology, or as a participant in social practices rather than as a product of those practices. They argue that making this move allows researchers to consider how literacies 'travel, integrate and endure' across contexts and domains, opening up a consideration of literacy's

'transcontextualized and transcontextualizing potentials' (p. 338). In other words, Brandt and Clinton want to grant literacy:

a capacity to travel, a capacity to stay intact, and a capacity to be visible and animate outside the interactions of immediate literacy events. These capacities stem from the legibility and durability of literacy: its material forms, its technological apparatus, its objectivity, that is, its (some)thing-ness. (p. 344)

In giving literacy a form and a role within social practices, they create an analytical tool for tracing connections between local practices and global influences (cf Clarke 2008; Prinsloo and Baynham 2008; Latour 1996). Researchers have taken up Brandt and Clinton's important critique in a number of ways: one is by employing a multimodal perspective as discussed above; another is by attempting to move beyond the 'literacy as a social practice' axiom (cf Street 2004). These are discussed briefly below.

While the perspective offered by bringing together multimodal and social accounts has done much to advance thinking around the local-global literacy question (eg Jewitt 2008; Pahl and Rowsell 2006a), researchers have argued that this effort offers only a partial vision for the future of studies in literacy and technology. For example, Koutsogiannis (2007, forthcoming) argues for a more sensitive historical and political theorisation of literacy and technology studies, one which accounts for the analytical strengths of multimodality but which also recognises the political economy of global flows of technology discourses, images and media. In his account of the digital literacies of young Greek people, Koutsogiannis shows how the deep histories of regions and countries on the periphery of the developed English-speaking world mean that social and cultural practices around the use of new technologies take on a different flavour to that usually assumed in typical accounts of 'new literacies' from middle-class US and UK perspectives (cf Prinsloo 2005b; Walton 2007). He argues that future research must find ways to bring together four interrelated parameters: (1) the need for 'a multi-level analysis of the complex modern reality' (p. 227) rather than simplistic rhetoric about global-local relations (2) interdisciplinarity which brings together theoretical and methodological traditions appropriate for the analysis of economic, social and cultural parameters (3) a deep appreciation for history and (4) a conscious political perspective.

Taking a similar line, Luke (2004) suggests that literacy researchers must do more than emphasise that literacies are social and ideological—research has done this effectively

since the late 1970s (see chapter two). Researchers must go on to explore and show the social, ideological and material *consequences* of different literacies ‘on the ground’:

the substantive challenge ... is to gauge and document the *material consequences* of social practices, as much as they might entail the recognition of vernacular languages, community “voice”, or local social practices *per se* ... the issue on the table is not simply whether literacy has autonomous or ideological effects, but how those ideological effects actually are used and deployed to shape capital, social relations and forms of identity, access to material and discourse resources—that is, to paraphrase Bourdieu (1993), how literate practices have convertible exchange value as forms of capital. (p. 332-3)

To do this, Luke argues that literacy researchers:

require a finer grained multilevel of analysis of which kinds of textual practice count, for whom, where, and in what contexts, but also in relation to the availability of other kinds of capital: economic, social, ecological, libidinal and otherwise. [This analysis can] tell us how literacy counts, how it is made to count, but ... only in combinations with other multi-leveled social scientific analyses of the availability, local use and control of other semiotic and material resources and social relations. (p. 333)

Combining these approaches can better illustrate the links between the local and what James Clifford (1992) calls ‘traveling cultures’—global flows of information, capital, bodies and images. Examples of this research are appearing where young people’s literacy practices, with and without new technologies, are shown to be locally enacted and globally inflected: multisemiotic, multilingual and blending across formal education and everyday contexts (eg Davies 2006b; Dolby and Rizvi 2007; Dyson 2003; Maira and Soep 2005; Nichols 2006; Pahl 2007; Prinsloo 2004). The current study takes up part of this challenge and presents a detailed account of how digital literacies are negotiated within particular school settings.

New texts and literacies

A third theme and preoccupation of current research in literacy and technology has been an examination of the effect of changed communications environments on ‘new literacies’ and on literacy education more generally (eg Coiro, Knobel, Lankshear and Leu 2008; Lankshear and Knobel 2006; Yelland 2006). A central argument is that the increasing take-up and use of new technologies means that young people’s experience of literacy is shaped by multiple engagements with digital media and global digital cultures. This has implications for many issues, including equity and schooling, identity

formation and relationships, civic and workforce participation and, it is claimed, the future of national economies (see 1.2). Much of the research is premised on an understanding that examining out-of-school literacies provides insights into young people's experiences in online and offline environments and that this knowledge can be used to work towards better educational outcomes (eg Carrington 2006; Hagood 2008; Kist 2005; Knobel and Lankshear 2007; Marsh 2005; Marsh and Millard 2006; Snyder 2002; Snyder and Beavis 2004). Finding ways to use the affordances of new technologies productively while at the same time helping students become capable and critical users is seen as a major challenge. Also notable are methodological developments for the study of literacies and new technologies (cf Hagood 2003; Leander 2008; Leander and Sheehy 2004; Mackey 2003; Nixon 2003) which have followed efforts at reimagining the nature of research practice in new media environments (cf Goldman-Segall 1998; Hine 2002, 2005; Jones 1999; Mann and Stewart 2000; Morris 2004).

Large-scale studies

Recent large-scale studies provide important snapshots of young people's access to and use of computer technologies outside schools, suggesting that while access is near universal in schools and homes in developed countries such as Australia (eg ACMA 2007; Ewing, Thomas and Schiessl 2008), the issue is more complex than having computer access (Selwyn 2004; Snyder, Angus and Sutherland-Smith 2004). Although socio-economic factors remain significant, 'digital divides' also exist around operational, cultural and critical capabilities (cf North, Snyder and Bulfin 2008). The UK project, *Children, young people, and the changing media environment* (Livingstone 2002), represents a contextualised analysis of the meanings and contexts of new media use within young people's daily lives. The study investigated how access to media goods frames subsequent use, tracing the slippage between use and access. Livingstone found that the contexts of leisure, home and family are increasingly aligned but also in tension, particularly in terms of the individualisation of leisure, together with the privatisation of everyday life and the democratisation of cross-generational relationships within the family. A comparative European study found similar patterns (Livingstone and Bovill 2001).

Livingstone's more recent work, *UK children go online* (Livingstone and Bober 2005; Livingstone, Bober and Helsper 2005), examined online risks and opportunities

associated with 9 to 19 year-olds' internet use. The findings are complex and cover a lot of ground. For example, the study found that while parents generally underestimate children's negative experiences with the internet, more than half of the young people in the study had seen online pornography; online opportunities and risks go hand-in-hand and 'internet literacy' is crucial. Further, the authors suggest that rather than a digital divide, the notion of a continuum from hesitant, narrow, or unskilled use to diverse, confident and skilled use, is more appropriate for understanding differences in new technology use.

In the United States, the *Pew internet project* has produced a wealth of information about young people's online practices. Reports have included studies on young people's use of social media (Lenhart and Madden 2007; Lenhart, Madden, Smith and Macgill 2007), online writing (Lenhart, Arafeh, Smith and Macgill 2008), cyberbullying (Lenhart 2007), gaming and online civic and political participation (Lenhart, Kahne, Middaugh, Macgill, Evans and Vitak 2008), young people's online content creation (Lenhart and Madden 2005), online dating (Madden and Lenhart 2006) and internet use by families (Kennedy, Smith, Wells and Wellman 2008). Amongst the findings of such reports is that half of American teenagers have created content for the internet and think it is unrealistic to expect people to self-regulate and avoid free downloading and file sharing. Many young people have created blogs and web pages, posted original artwork, photography, stories or videos online, or remixed online content into their own new creations.

A study by the Kaiser Family Foundation, *Generation M: Media in the lives of 8-18 year olds* (Roberts, Foehr and Rideout 2005), asked questions ranging from those exploring broad social issues to health concerns to issues of cognitive development. They found that the young people surveyed live media-saturated lives and have access to an unprecedented amount of media in their homes. Unsurprisingly, those with easy access tend to spend more time using media, but age, gender and ethnicity continue to be influential. For most young people, parents don't impose rules about their use of media and watching television and listening to music remain generally more important (time wise) than the internet. Those with the poorest grades spent the most time playing video games.

Similar findings were obtained in the *Being digital* survey (Snyder et al 2008) (see 1.5). While young people are a heterogeneous group, demographic factors continue to

structure their lives as they engage with new technologies; school sector and socio-economic status still make a difference in the quality of access to the internet, with higher SES students privileged. Gender differences also persisted in the context of new technology use: girls tended to use technologies to communicate, while boys played more games; both listened to music and watched television equally. There was little evidence of innovative use of new technologies in schools, with most young people reporting that they learned to use new media outside of school. Significantly, the survey demonstrated not just a changing media environment, but also the persistence of continuities between old and new cultural forms and technologies (cf 3.1).

Although these large-studies provide a valuable picture of broad patterns of use, they do not always adequately account for the heterogeneity of use among young people and for the influence of different cultural, historical, economic and geographical variabilities (cf Asthana 2006; Snyder and Prinsloo 2007).

New cultural forms and practices

In addition to large-scale studies, smaller studies have examined aspects of young people's use of new technologies in connection with literacy, in- and out-of-school. An increasingly wide range of texts and practices is receiving attention: the internet and gaming (on and offline), online writing (chat and instant messaging [IM], blogging, fanfiction), mobile phones and texting, search engines, social networking and other fan sites, peer-to-peer technologies and digital consumption and production (remix practices, video, music, imaging and podcasts). As these technologies have developed, so have the social and cultural practices associated with their use. Keeping track of these changing texts and practices is a key challenge for researchers. Much of this research argues that these new texts, technologies and practices require new ways of reading and writing which traditional forms of literacy do not support. These 'new literacies' are directly connected to new technologies and to the new communications environment (Kress 2003). Such claims are often couched in deterministic discourses but also seem to have a ring of truth, appearing to be self-evident; books and screens are materially different and would seem to require related but different skills. This central argument has led to the development of two strands of research: first, a skills-based approach and second, a focus on popular digital cultures.

In skills-based approaches the concern is to identify and list core digital literacies (eg Coiro 2003; Coiro and Dobler 2007; Leu, Kinzer, Coiro and Cammack 2004). Don Leu and colleagues (Leu et al 2004) provide an indicative example when they offer the following list of new literacies:

- using a search engine effectively to locate information;
- evaluating the accuracy and utility of information that is located on a webpage in relation to one's purpose;
- using a word processor effectively, including using functions such as checking spelling accuracy, inserting graphics, and formatting text;
- participating effectively in bulletin board or listserv discussions to get needed information;
- knowing how to use e-mail to communicate effectively; and
- inferring correctly the information that may be found at a hyperlink on a webpage. (p. 1590; also reproduced in Prinsloo 2005b: 2)

Such lists define digital literacy as a set of operational skills—autonomous and without a context that might render adverbs such as ‘effectively’ or ‘correctly’ meaningful. It is also common for such lists to become out-dated quickly. For Leu and colleagues, the new literacies are similar to the ‘old’ literacies and are underpinned by ‘basic’ reading skills like ‘phonemic awareness, word recognition, decoding knowledge, vocabulary knowledge, comprehension, inferential reasoning, the writing process, spelling ... the literacies of the book and other printed material’ (p. 1590).

While skill-based approaches usefully emphasise the continuities between old and new literacies, they have been critiqued for focusing on individual and cognitive skills and ignoring the situated nature of digital literacies (cf Snyder and Prinsloo 2007). They posit ‘a model of social consensus and assumptions of social parity at the macrosocial level’ (Prinsloo 2005b: 2) which ignores the concrete realities of many settings (eg Mutonyi and Norton 2007; Walton 2007) and are reminiscent of traditional histories of innovation (cf Edgerton 2007) (see 3.1). Further, Prinsloo (2005b) argues that skills-based approaches ‘treat as given the processes of signification and meaning-making involved, which on closer examination turn out to be considerably more complex and variable’ (p. 3). Such approaches inevitably lead to restricted forms of skill-based curricula and pedagogy and to skills-based, practical guides for teachers (eg Kajder 2003; Nettlebeck 2005; Richardson 2006).

Skills-based approaches, which have a distinctive school-like feel, contrast with studies exploring young people’s engagement with popular digital cultures. This work attempts to define digital literacies more broadly. Studies have examined popular texts and

practices such as: fanfiction and blogs (Black 2006, 2008; Carrington 2005b; Chandler-Olcott and Mahar 2003), email (Mavers 2007; Merchant 2003), internet chat and instant messaging (Jacobs 2006; Lam 2004; Lee 2007; Lewis and Fabos 2005; Merchant 2001); video games (Beavis 2002, 2004; Carr, Buckingham, Burn and Schott 2006; Gee 2003, 2007) and online role playing (Hammer 2007; Steinkuehler 2008; Thomas 2007); culture jamming, hacking, remixing and memes (Knobel and Lankshear 2007; Lankshear and Knobel 2006); new media production (Burn 2000, 2003, 2007); social networking (Boyd 2008; Livingstone 2008; Perkel 2006); and internet cafes and popular websites (Atkinson and Nixon 2005; Beavis, Nixon and Atkinson 2005; Stone 2007).

In general, this research shows how digital popular practices might be reframed as complex meaning-making activities rather than as popular interests (see 2.3). This research also attempts to demonstrate the value of creative and critical engagement with popular cultural texts for consolidating and extending students' understandings of how texts work (cf Doecke and McClenaghan 2005; Dyson 2003; Hagood 2008; Marsh and Millard 2000; Morrell 2002). Victoria Carrington (2005b), for example, argues that when teachers recognise young people as active participants in a diverse range of textual cultures, who bring expertise and skills to the learning context, students can be encouraged to remix, enjoy and engage critically with these textual practices. This can provide students with opportunities to produce and disseminate 'authentic' and meaningful texts of their own—new technologies can make this easier—and can also allow teachers to build links between young people's in- and out-of-school worlds and identities. Of course, using such texts in school means they are framed differently (MacLachlan and Reid 1994): they tend to become 'schooled' or domesticated and lose their out-of-school appeal (cf Bigum 2002; Faulkner 2004) (cf 3.1).

A key argument in research on popular digital cultures—as with research on popular culture and schooling more generally—is that while studies demonstrate the critical and curricular value of popular culture, out-of-school literacies are largely ignored by schools. In this research, out-of-school digital popular cultures and their associated literacies are portrayed as authentic, engaging, fun, informal and creative, while school teaching and learning practices are the opposite—dull, dry, inauthentic, rigidly formal and lifeless (cf Facer, Furlong, Furlong and Sutherland 2003; Gee 2004). In this analysis, schools are locked into an information and delivery mindset based on an industrial model of schooling and either consciously ignore young people's digital

cultures (eg by prohibiting mobile phones) or do not understand or appreciate them and so miss valuable opportunities. Claims about rich digital lives outside of school and barren ground inside schools are reminiscent of the home-school mismatch hypothesis (cf Luke 2004) (see chapter two). Indeed it would seem to represent a new variety of the home-school mismatch hypothesis.

Both of these research strands—a skills-based approach and a focus on popular digital cultures—represent attempts to grapple with the complex issue of what kinds of skills and/or practices constitute literacies for contemporary times. Both are responses to claims about the changing nature of reading and writing with respect to new technologies and other ‘new’ social, cultural, economic conditions (see 1.2). Both can tend toward determinism and overstatement about the power and impact of new technologies on communication and social life. There are strong parallels between contemporary claims about new literacies and much older claims made for ‘old’ literacies (cf Graff 1979) (see 2.2). In addition to being required by new communication practices, the new digital literacies are said to lead to ‘significant individual and national progress, to economic growth and affluence’ (Koutsogiannis 2007: 220). In this analysis, the new literacies are as autonomous as the old. Koutsogiannis has called these claims ‘the new literacy thesis’ and the ‘new autonomous model of literacy’ observing that it ‘leads to a downgrading of complex sociocultural realities and an emphasis instead on the importance of infrastructures, serving as fuel for the engine of the digital economy’ (p. 220). The current study takes up this critique and explores a broader view of digital literacies than that represented in these two research strands. It attempts to reframe the relationship between home and school, moving away from the difficulties of the home-school mismatch hypothesis.

Identity and digital media

The fourth theme and preoccupation of current research in literacy and technology is identity. Language researchers have had a long and deep interest in identity and its relationship with language and learning (cf Bernstein 1996; Britton 1970; Dixon 1969; Gee 1996, 2001; Norton 1999; Peel, Patterson and Gerlach 2000; Rampton 2006; Wortham 2006). This interest has continued in recent times alongside a focus on identity from scholars in related fields (eg Bauman 2004; Giddens 1991; Hall 1996; Holland, Lachicotte, Skinner and Cain 2001; Jenkins 1996; Turkle 1995). In this ferment of activity around identity, attention has been paid to the connections between identity,

literacy and new technologies, especially for young people. Current research acknowledges issues of identity as central to young people's engagement with new technologies, both in online and offline spaces (cf Buckingham 2000, 2008a). This position is not new and supports research into identity and literacy more generally (Bartlett 2005; Collins and Blot 2003; Gee 2001; Pahl and Rowsell 2005). There are at least two points to make here about the way identity has been handled in recent research.

First, a good deal of academic research and much popular commentary considers young people's use of new technologies to be a defining feature of their identities (cf Koutsogiannis 2007). Most current research argues that the current 'digital generation' has grown up knowing only computer-mediated environments and as a result are aligned differently to new technologies: they are the so-called cyberkids, screenagers, members of the net-gen, digital natives. This deterministic rhetoric was introduced earlier as the technology-as-saviour discourse (see 1.2). Characterisations of young people as a breed apart from their parents are common in both academic and public discourses around youth and new technologies. Lankshear and Knobel (2003), for instance, suggest that different mindsets—insiders and outsiders—characterise differences between technologically engaged young people and adults and teachers representing established traditions in (print-centric) schools. Similarly, Carrington (2004) takes up the notion of young people as the *Shi Jinrui*, Japanese for 'new humankind'. While acknowledging the fine line between determinism and hype, she nevertheless argues that 'cultural and technological framings of the lives of young people have been profoundly altered by the advent of new communications technologies and electronic texts' (p. 215).

Popular commentary argues a similar line and exaggerates generational identity differences. Prensky (2006), with his digital native and digital immigrant binary, suggests young people are genetically and cognitively different from (older parent) digital immigrants; this leads to different learning styles and different ways of seeing the world. Similarly, Don Tapscott (1998) in *Growing up digital: The rise of the net generation* sets up a pair of binaries, one generational, the other between television and the internet. Tapscott links television (passive, dumbed down, isolating and narrow) to an older baby boomer 'television generation' (increasingly conservative, hierarchical, inflexible and centralised). In contrast, the internet (active, intelligence promoting, democratic and interactive, community building) is linked to the 'n-geners' (savvy, self-

reliant, analytical, articulate, creative, inquisitive, socially conscious). Tapscott attributes these generational differences to the technologies favoured by each (Buckingham 2008b).

Although this academic and popular commentary recognises the significance of identity in young people's engagement with new media, it both overemphasise the role and power of new technologies. In the case of Lankshear, Knobel and Carrington there is a tension between their obvious enthusiasm for digital cultures and their sense of what can realistically be attributed to these cultures. This tension is played out in much of the current research. Prensky and Tapscott's technologism ignores the heterogeneous reality of young people's use of new technologies, as well as aspects of technological development itself (cf Negroponte 1996; Perelman 1993; Rushkoff 2006). Buckingham (2008b) points out that both academic and popular accounts tend to ignore three elements: (1) the 'fundamental continuities and interdependencies between new media and "old" media' (p. 14) (2) the problems and challenges of online participation and (3) the 'banality' of the majority of young people's media use. To these can be added an ignorance of the complex heterogeneity of young people's access, motivation and interests (cf Bulfin 2007; Koutsogiannis 2007; Prinsloo 2005b).

The second point to make about current research around literacy and identity is that a number of productive frameworks have been developed which move discussion beyond essentialising notions of identity and young people's engagement with new media. Guy Merchant's (2005) work provides a pertinent example. In a study of young children's digital writing, Merchant develops the concepts of *anchored* and *transient identities*. Anchored identities are 'positions which are profoundly influenced by a long history of socio-cultural practices (such as gender or religion)', while transient identities are 'those which are more easily made, remade and unmade (such as fandom)' (p. 304). Merchant uses this framework to understand young people's digital writing as identity work, where some aspects of identities seem more anchored and powerfully shaping (often connected to family, cultural or religious identifications), while others are more ephemeral (eg connected to popular music interests). He notes the dialogic relationship between the two and how 'transient identities are played out against the backdrop of wider socio-cultural practices' (p. 307), not less important or secondary, but identifications which are 'easier to adopt and easier to discard than anchored identities' (p. 307).

Other generative frameworks have been suggested. Pahl and Rowsell (Pahl 2004; Rowsell and Pahl 2007) develop the idea of *sedimented identities* which they use to *trace* identities in texts and practices across home and school domains. In their discussion of practice theories of identity, Holland and Leander (2004) develop the notion of *identities as laminated*: ‘where individuals draw on different cultural resources and structures and recast and transform available and organized social positions to shape their subjectivities’ (p. 131), *layering* these positions into ‘histories in person’ and ‘histories in institutions’ (p. 137). Thomas (2007) develops a *semiotics of identity* aimed at understanding how young people produce and perform identities in online spaces through multimodal social (eg avatars) and discursive practices (eg online chat and roleplaying). Weber and Mitchell (2008) invoke the idea of *identities-in-action*, seeing connections between young people’s digital productions and processes of identity negotiation:

Like youth identities, young people’s own digital productions facilitate a blending of media, genres, experimentations, modifications, and reiterations ... young people’s interactive uses of new technologies can serve as a model for identity processes. We propose labeling such cultural production activities *identities-in-action* as a reminder that, like digital cultural production, identity processes are multifaceted and in flux, incorporating old and new images. (p. 26-7)

Each of these frameworks provides tools for investigating how identities are formed, constituted and reworked through social and cultural practices in on and offline spaces. They show how new technologies and popular digital cultures provide contexts for identity play and performance. They encourage researchers to think about identity as ‘processes of negotiation’, where identities are worked out in the flow of texts and practices across different domains, in- and out-of-schools (cf Bulfin and North 2007).

Redesigning the home-school relationship

After tracing these four key themes in current research, I am able to make some general observations. The shifts in recent research can be summarised as a series of moves from and to particular positions:

- from changing print literacies to multimodal semiotic production and consumption
- from ‘local’ situated accounts of literacy to an accounting for ‘global’ travelling cultures

- from the home-school mismatch hypothesis to redesigning relationships between home, school and community.

As the first two points have been discussed above at length, I will comment briefly on the third before concluding the chapter.

Despite recognising the significant contribution of first and second generation literacy studies, Baynham (2004) argues that these studies have not done enough to ‘theorise the relationship between the local, home literacies and those of schooling’ (p. 287). The NLS and studies of literacy and technology have placed considerable emphasis on the home-school mismatch hypothesis (Luke 2004) which has meant that connections and continuities between home and school have not always been pursued. In an attempt to move beyond the persistent home-school binary, a small group of studies has critiqued this emphasis on discontinuity and begun to explore other ways of understanding the home-school relationship. Bernstein’s (1996, 1999) theories of language use in- and out-of-schools have been useful for some of these researchers (Koutsogiannis 2007; Moss 2001). Others (Bulfin and North 2007; Maybin 2007; Pahl 2004, 2007; Prinsloo 2004) have used social theory with an emphasis on practice, dialogic negotiation and space (Bakhtin 1981; Bourdieu 1990). For example, Maybin (2007) argues that the NLS has often made the home-school mismatch hypothesis an unhelpful binary which reifies particular domains and literacies:

First, “everyday literacy” outside school has been conflated with “vernacular literacy”, defined as unregulated by the rules and procedures of institutions, institutionally unvalued, private, secret, often playful and oppositional The second kind of conflation involves an idealised abstract notion of a strictly regulated, formally instructed, autonomous “schooled literacy”, which is taken to represent students’ actual everyday experience of literacy in the classroom. (p. 516)

Maybin suggests that the first of these confluences—out-of-school literacies with vernacular literacies—underestimates the influence of schools, churches and other social institutions on home and community literacies and underplays home literacies. This conflation also tends to idealise the supposedly unregulated, informal and rich quality of all that young people experience outside of schools (cf Bulfin and North 2007). The second conflation—school literacies and ‘horizontal discourses’ (Bernstein 1999)—is partly due to a narrow view of school literacies as only those directed by teachers in formal curricular learning and partly due to the overlooking of student-student interactions in and around classrooms and schools. Research on classroom

dialogue has focused mainly on teacher-student interactions rather than on student-student talk (Maybin 2006). Significantly, studies which examine student-student interactions offer a more complex and negotiated picture of schooled literacy (see 2.4). This research direction is taken up in more detail in chapters seven and eight as a frame for understanding the contribution to knowledge of the current study. As this section demonstrates, the home-school mismatch hypothesis has also been extended to studies examining literacy and technology—Koutsogiannis (2007) has called this ‘the new literacy thesis’ (p. 220). The current study takes up both the critique of the old and new literacy theses and examines the study’s data from this reframed perspective (see 8.3).

In this chapter I have developed a critical-historical perspective on studies in literacy and technology and traced the development of this work from the early 1980s through to current research. This has meant identifying key trends and preoccupations in the research and using indicative studies as examples. This critical-historical perspective provides a framework through which the study’s analysis can be read. The more recent development of the field should be seen as a convergence of several related fields into a third generation of studies focused on the four preoccupations outlined in the final section of the chapter (see 3.4). Part one (chapters two and three) has detailed the theoretical ground upon which the study stands, paying its ‘theoretical debts’ (Ito 2002). In part two, I discuss matters relating to the study’s design and implementation (chapter four) and to data analysis (chapter five).

PART 2

THE STUDY

4

Methodology, methods and ethics

4.1 Designing research

Combining theory, methodology and methods into a coherent and logical package is a matter of research design. (Knobel 1997: 116)

In practice, I suggest, research is always a fumbling act of discovery, where researchers only know what they are doing when they have done it; and only know what they are looking for after they have found it. (Hamilton 2005: 288)

These two epigraphs frame a key tension in qualitative research. On the one hand, as Knobel points out, a strong research design brings together theory or epistemology, methodology and methods into a coherent and thoughtful whole. Such care and planning are essential for project completion. On the other hand, the reality of qualitative research is often a different story. As David Hamilton suggests, it is only after the event—when the thesis is written, the article published, the report submitted—that researchers ‘can maintain they had a “good-quality and well-framed research question”’ (p. 288). For Hamilton, forcing the messiness of research into a linear progression is reverse engineering; representing research this way papers over the messy work involved in bringing a project to ‘completion’. He is critical of research textbooks which represent research as a more-or-less straightforward process, beginning from research questions and ending with research reports. Instead, he asserts, research is always ‘a fumbling act of discovery’ (p. 288).

Hamilton's concern is that the provisional and contingent nature of research practice is frequently misrepresented: for instance, views about 'proper' research being conducted under 'laboratory conditions' or novice researchers expecting always to begin and end with the same research questions. Work like Bruno Latour and Steve Woolgar's (1979) *Laboratory life*, a classic study of scientists and the social construction of scientific knowledge, reveals the social, cultural, political and institutional messiness of research practice (cf Latour 1987). Richard Beach and Dennis Sumara offer similar arguments. Research unfolds unpredictably as it is *pursued*: 'the path of inquiry is "laid while walking" ... depending on interpretations given to questions that present themselves rather than questions which are predetermined' (Sumara 1996: 126-7; cf Beach 2000: 23-4).

Informed by this tension between design and discovery, I explore the messy practice of doing research. My aim is to compare what I hoped to do with what I did—the plan and the lived experience of doing research—and so describe what I did, explain why I did it and offer some evaluation of my efforts. In my view, research is best understood as a theoretically driven, systematic and reflexive process through which knowledge claims are made and evidence produced to support these claims. Researchers also accept ethical and moral responsibilities as part of research practice which they attempt to negotiate even as they recognise the provisional nature of the research enterprise. These tensions inhere in responsive, lively school curriculum, where, as noted previously (see 1.4), the intended curriculum of administrators, curriculum writers and teachers is enacted by and with students in typically unforeseeable and creative ways (see also chapters six and seven).

Efforts at transparency are essential for research to be evaluated by others and so I first sketch a brief overview of the study as a context for the discussion that follows. I then discuss ethnography and case study showing how these epistemological and methodological approaches contribute to the study's overall orientation and design. This is followed by a discussion of the data generation design, showing how participants, sites and data generation methods were brought together to enable the fieldwork. I also comment on two constructs used to judge quality and credibility in qualitative educational research and explore salient ethical issues with reference to research with young people.

4.2 Study overview

As noted previously (see 1.3), the study examined three broad questions: the first about what young people do with new technologies in schools, and the second and third about the implications of these activities for language and literacy learning in and around schools. These questions were investigated through 24 case studies of young people, aged 15-16, in five Victorian secondary schools, conducted over one school year. The cases have an ethnographic orientation as my aim was to understand literacy practices and the use of new technologies within specific social and cultural contexts. The study is not a traditional ethnography but rather a limited or focused ethnography where ethnographic perspectives were used to construct the objects of study and where case-study approaches helped focus the research on young people's experiences of new technologies in schools.

Participating schools represented a range of social, cultural and economic communities and were drawn from all education sectors (State, Catholic, Independent) and from within greater metropolitan Melbourne (see 5.4 and table 4.1). Over the life of the study, 5 schools, 24 students and 7 teachers were involved. After school contacts had been established, students were invited to participate. In all five schools, I visited Year 10 English classes, explained the study and answered student questions. In four schools (Bankston, Highview, Middleton and Playford), students self-selected for participation and in the fifth school (Basso) the classroom teacher identified a group of four students whom she encouraged to participate (see table 4.2) (all names are aliases). Care was taken to encourage involvement from a range of young people. This included accounting for interest and non-interest in, and/or familiarity with, new technologies and digital culture.

Working with participants and schools over one year, I generated a range of data (see table 4.3): interview recordings and transcripts, ICT-media diaries, fieldnotes, as well as other documents and artefacts (eg school policies, photos and digital video). Together, these texts and artefacts form the study's dataset. Students kept an ICT-media diary for two weeks and then participated in at least two, hour-long semi-structured group interviews exploring their use of new technologies at school and home. After transcribing early interviews, I identified a core group of young people and conducted further group interviews. These interviews took place in the schools, with some conversations spilling over into email, SMS and IM. I also interviewed classroom

teachers during the year. Twenty interviews were conducted, generating approximately 14 hours of interview data. All interviews were transcribed in full. To generate visual data, I took photos of surrounding suburbs, school grounds, classrooms, computer labs and participants interacting with and around computers and other new technologies. I also encouraged participants to photograph themselves or friends using new technologies. I observed English classes and classes in computer labs and gathered relevant artefacts and documents such as internet use policies, curriculum documents and student work.

This brief outline of the study is elaborated in the remainder of the chapter. In the next section (see 4.2), I discuss my use of ethnography as a broad research orientation. In section 4.3, I explain how case-study approaches were used to focus the study, bringing ethnographic perspectives and tools to bear on young people's use of new technologies in schools. My approach to data analysis is presented in chapter five.

4.3 Ethnography as a research orientation

Research is a systematic attempt to re-see the everyday, partly by stripping away from our observations the typifications made available by our culture, and, in turn, by treating those typifications as crucial aspects of everyday experience itself—available for analysis. (Freebody 2003: 42)

Ethnography has been variously defined as a research practice (what ethnographers do), a research product (what they write), a field of study (in the same way critical discourse analysis is a field of study as well as an analysis tool) and as a way of constructing knowledge about the world (an ethnographic account). In its simplest form, ethnography is a social science *orientation* aimed at 'describing and analysing the practices and beliefs of cultures and communities' (Freebody 2003: 75). Anthropologist David Fetterman (1998) argues that ethnography is more than a set of methodological processes: it is both 'the art and science of describing a group or culture' (p. 1).

Traditional ethnographies evoke images of the lone researcher living for years in the communities they study. The work of early twentieth century anthropologists is indicative of ethnography's historical roots: Bronislaw Malinowski (1922) in Melanesia, Margaret Mead (1943) in Samoa and the ethno-linguist Edward Sapir (1921) among Canadian and North American Native Indians. Ethnography has since been taken up in many related fields, including: sociolinguistics (eg Hymes 1974; Scollon and Scollon

1981), social psychology (eg Scribner and Cole 1981) and within education (eg Green and Wallat 1981; Willis 1977). These fields borrow from earlier anthropological work but broaden the range of sites and issues explored (see 2.2 and 2.3). They also combine their own field-specific knowledge with earlier traditions (see Geertz 1973, 1983) so that ethnography is practised differently across and within disciplines.

Because ethnography is not a unitary set of understandings and practices common across all fields, what counts as legitimate inquiry, what will be examined and what tools will be used, depends on the theoretical frameworks and intellectual terrain occupied by different communities of practice (Green and Bloome 1997). As indicated in part one of the thesis (see chapters two and three), this study takes its driving theoretical perspectives from sociocultural theories of language, literacy and education (eg Barton 1994; Baynham 1995; Cazden 2001; Gee 1996; Halliday 1978). But this study is not a traditional ethnography and is instead underpinned by an ethnographic orientation towards culture and social life. This is more than a naming exercise (cf Heath 1982b) and informs my approach to the research questions and study design, the sites (intellectual as well as physical) and participants. Because ethnographers generally seek understanding of social and cultural phenomena from an insider, or emic, perspective, lengthy fieldwork is often required. This is generally not feasible within the constraints of modern doctoral study. I discuss two alternatives below.

Judith Green and David Bloome (1997) draw a useful distinction between three different approaches to ethnography: (1) doing ethnography, (2) adopting an ethnographic perspective and (3) using ethnographic tools. These heuristics offer flexibility to engage in ethnographic work at various levels of depth: from comprehensive studies, to research employing ethnographic tools and processes. This study takes up the second and third distinctions. Adopting an ethnographic perspective allows the researcher to use ethnographic understandings to examine particular social practices, assiduously narrowing the frame of study to a phenomenon or aspect of practice manageable within the study's constraints (cf Barton and Hamilton 1998; Knobel 1997). Green and Bloome insist on one caveat for researchers using this approach: 'central to an ethnographic perspective is the use of theories of culture and inquiry practices derived from anthropology or sociology to guide the research' (1997: 183).

Margaret LeCompte and Jean Schensul (1999) offer a similar alternative to full-scale ethnography. Where long time periods are not available they suggest employing 'compressed' ethnography (p. 88) by reducing time in the field. A compressed approach is possible when:

- researchers are familiar with the field site
- the work is focused on one aspect of culture
- researchers are able to work with 'cultural experts' who can help with contextual and cultural details that might otherwise require extended time to understand.

These two alternatives to full-scale ethnography, while sacrificing depth, allow researchers to leverage the benefits of ethnographic perspectives and tools while getting around the difficulties, chief of which are the length and cost of extended fieldwork and the high level of commitment needed from participants. In this study, my experience as a secondary school teacher—as a close observer of young people, teachers and schools—gives me a partial 'insider' perspective. My position as researcher (ie outsider) provides useful distance from the particularities and norms of each site, allowing me to be attuned to differences between schools (cf Hammersley 1994). The young participants were viewed as cultural experts on young people and their use of new technologies.

Ethnography of/in education

So far, I have made brief comments about ethnography in general. I have argued that ethnography is a situated practice and that under certain conditions compressed or focused ethnography is appropriate. It is now necessary to make some additional comments about ethnography in relation to education and more specifically to the study of language and literacy.

Green and Bloome (1997) suggest a distinction between the *ethnography of education*, work by anthropologists and sociologists studying education, and *ethnography in education*, educational researchers, teachers and students who use ethnography to study education. Green and Bloome describe ethnography *in* education as 'studies grounded in knowledge derived from the field of Education and the historical background of ethnography in anthropology and sociology' (p. 186). This heuristic is useful in a number of ways. It points to differences in how ethnography is used in and

across disciplines, and it indicates how education and ethnography remain interests for a range of researchers, both within and outside the field. Both 'types' of ethnography borrow heavily from one another ie anthropologists, sociologists and educators often collaborate, while educators employ a wide variety of disciplinary understandings as research and pedagogical frameworks.

Ethnography has been used more frequently in education since the mid 1970s when anthropologists, sociolinguists and educators began a serious and systematic study of language use in classrooms (Green 1983). In the US, the work of Dell Hymes (1974), John Gumperz (Gumperz and Hymes 1972), Courtney Cazden (1988; Cazden, John and Hymes 1972) and Shirley Brice Heath (1982a, 1983) were all influential in the take up of ethnography as an approach to the study of language in classrooms, schools and homes. In the UK, similar work was pursued by Basil Bernstein (1971), Douglas Barnes (Barnes 1976; Barnes, Britton and Rosen 1971), Harold Rosen (Rosen 1972), James Britton (1970) and John Sinclair and Malcolm Coulthard (1975). Much of this work investigated connections between language use and school success, examining how everyday communicative experiences shape social and cultural practices, identity and engagement with institutions such as schools (see also Bloome 1987; Cook-Gumperz 1986; Gilmore and Glatthorn 1982; Green and Walleet 1981; Shuman 1986). These early studies, and many since, frequently combined ethnography and case study and, rather than being comprehensive ethnographies, commonly employed ethnographic perspective and commitments.

Educational ethnography continues to develop as researchers examine unfamiliar sites and phenomena. This sometimes means examining traditional problems with new theoretical frameworks. Impetus for recent changes in educational ethnography have come from at least two sources, both outside the field. First, recent perspectives in anthropology and sociology have argued that researchers must adapt themselves and their theories, methodologies and methods to new global and local realities and to networked societies (Castells 2000) (see 1.2). Researchers have argued that flows of people, 'information, symbols, capital and commodities in global and transnational spaces' (Kearney 1995: 547), have changed the way meaning and culture are made in local sites (cf Appadurai 1996). Cultural anthropologist, Graham Marcus (1995, 1998), argues, for example, that while traditional forms of ethnography in anthropology and sociology focus on a group of people in a particular place, *multi-sited* ethnographies study culture by exploring *connections*, *parallels* and *contrasts* among a variety of

different sites. Educational researchers are beginning to take on these challenges (see Cruickshank 2006; Dolby and Rizvi 2007; Farrell 2006; Ito 2002; Leander 2008; Luke and Carrington 2003) (see also 3.4).

The second impetus for change in educational ethnography relates to the growing influence of new media. This has meant that researchers using ethnographic methods and perspectives have examined technologically mediated environments (eg Hine 2002, 2005; Jones 1999; Miller and Slater 2000; Rheingold 1995; Turkle 1995). Such studies sit alongside the efforts of educational researchers to explore the role of popular digital technologies play in literacy learning, in online/offline relationships and in the formation of identities amongst young people (eg Lam 2000) (see also 3.4). The current study makes a contribution to this research, with particular reference to how new technologies and practices play out in the different, but connected, domains of young people's lives.

The study is an educationally oriented but anthropologically and sociologically informed investigation. Seen in this way, ethnography is not only the collection of tools that the study employs, but is the study's underlying perspective on the complex connections between young people's everyday lives and their experiences in school with new technologies and literacy learning.

4.4 Case-study approach and practice

What the [researcher] is in fact faced with ... is a multiplicity of complex conceptual structures, many of them superimposed upon or knotted into one another, which are at once strange, irregular, and inexplicit, and which he must contrive somehow first to grasp and then to render. (Geertz 1973: 10)

The study's ethnographic orientation is overlaid with a multiple case-study framework—both closely related methodologies. While ethnographies often include case studies, case studies commonly gather and organise data using ethnographic methods. When used together it can be difficult to identify methodological divisions as there are no clear-cut boundaries. Most importantly, though, employing a case-study approach enables an ethnographically oriented study to be narrowed down and focused on particular phenomena (cf Bassey 1999; Knobel 1997; Yin 2003). Robert Yin (2003) suggests that case study need not be exclusively qualitative. They are, as Peter Freebody (2003) notes, 'empirically omnivorous' (p. 83). Case studies are therefore

flexible in application, process and reporting and accept a range of data. These features are well suited to the current study's aim of investigating young people's use of new technologies in and around classrooms and schools. The case studies presented in part three (see chapters six and seven) use qualitative data with some reference to the quantitative data from the *Being digital* survey (Snyder et al 2008). The combination of a fine-grained interpretive perspective with a broader quantitative picture allows a broader understanding of the phenomena to emerge.

Yin identifies two main case-study designs: single and multiple. Single case designs focus on one instance or 'case' as the basis for a study: often a unique or extreme case. When the study contains more than one case, it becomes a multiple case design. Multiple case-study design offers a number of advantages for the study. These designs are employed when the interest is in the connections and 'sum' of more than one case. The evidence from multiple cases can be more compelling, strengthening a study's validity, trustworthiness and generalisability (Merriam 1998; Yin 2003) (see 4.6). Moreover, multiple case designs, which are commonly used to highlight convergence or divergence amongst cases (Yin 2003), can be 'employed effectively in investigating complexity in everyday life' (Knobel 1997: 123). In the following two subsections, I examine two central tensions: (1) the relationship of case study to context and (2) understanding processes of negotiation in ethnographic case study.

Understanding case study and context

Differences in how case study is defined relate to emphases on the *process* of conducting case research, the *unit* of analysis or the *end product* of a study (Merriam 1998). Robert Stake (1995) and Sharan Merriam (1998) focus on the unit of analysis and explain cases as 'bounded' or 'integrated systems', also noting how such systems are situated within larger networks: how cases are always cases within larger cases, superimposed and knotted into one another (cf Geertz 1973). Similarly, Yin (2003) argues that case study is a 'comprehensive research strategy' (p. 14) and 'all-encompassing method' (p. 14) capable of investigating 'a contemporary phenomenon within its real-life context, especially when the boundaries between phenomena and context are not clearly evident' (p. 13). The current study builds on this productive tension between the blurred boundaries of case and context. The study does this by recognising: (1) that cases and their boundedness are entities or things—that they are situated and (2) that cases are interrelated entities, only ever partially understood and

always with reference to the range of 'intricate relations' between the phenomenon and its biography and history (cf Mills 1978).

This key productive tension illustrates how context is not a static physical setting—it is not an empty container which holds or influences social action in a causal way. Instead, both context and case are constituted in and through language and social practices. Contexts, like language, are interactively achieved phenomena rather than predefined sets of forms and content (Goodwin and Duranti 1992); they are dynamically made and remade in the flow of everyday life (cf Bourdieu 1990). A question such as 'where does phenomenon end and context begin?' quickly unravels the idea that cases and contexts can be neatly bounded and traced. It is worth remembering that 'cases are constructed, not found' (Dyson and Genishi 2005: 2).

A view of language and context as dynamic, interactive sets of influences might be understood as comprising three interrelated dimensions: (1) context as the physical setting of people's actions (2) context as social activities, events and practices which are invoked, co-constructed and coordinated in particular settings and (3) context as extra-situational, comprising sets of practices not easily located at the local level (Dyson and Genishi 2005) (see also 3.4). Each of these dimensions is itself a network of practices and relationships, which overlap and mediate each other, building progressively broader, more complex views of the relationship between phenomena and context.

To consider each dimension: *Physical settings* are not simply empty, neutral spaces—like a theatre stage waiting to be filled with people and objects—but are made meaningful through social activities. These social *activities, events and practices*, as well as being the stuff of interaction and social life, also constitute the social and cultural 'contexts' within which interaction occurs. These interactions are mediated by language, other semiotic resources, by material artefacts and technologies and by histories and biographies (cf Engestrom, Miettinen and Punamaki 1999). These elements are coordinated in discourses or semiotic domains (Gee 2005) which are constitutive of identities and are deeply ideological (see 2.3). The notion of context as *made* in and through social and cultural practices offers a powerful way to move beyond static notions of context-as-container. *Extra-situational contexts* are the larger social, cultural, economic, political and historical forces intersecting at local sites and in the practices of individuals and groups (cf Gupta and Ferguson 1997). This larger

ethnographic context is 'articulated in unfolding interactions' at the local level (Dyson and Genishi 2005: 8) and shapes practice and discourse through processes of dialogic negotiation (Bakhtin 1981). These negotiations are tied into historically constituted power relations which influence who speaks with what authority, the kinds of meanings which are socially powerful and the distribution of social goods through society (cf Fairclough 1989; Gee 2005).

The three dimensions of context—physical settings, social practices and extra-situational influences—form a dynamic understanding of context as interactively achieved phenomena and a framework for examining the relationship between phenomena and context in the analysis of ethnographic case-study data (see fig 5.1). As an example of how these dimensions might be employed in the study, below is an extract from fieldnotes written during a visit to Playford School (see table 4.1 and section 5.3). The description is of a group of adolescent boys in a school computer lab:

Computers line the walls of a purpose built computer lab where a group of ten young men, aged 15-17, are each using individual computers, all facing out with their backs to the centre of the room. We are out of the usually watchful eye of their teacher who is in another room with the rest of the class.

The boys are ostensibly engaged in their schoolwork—a variety of activities for their foundation skills English class—but they also flick back and forth between other activities, games and the like, that they have hidden on the school servers or smuggled in on their personal USB flash drives. While they are flicking back and forth between multiple games and their own schoolwork, they also interact with one another, calling out the action as it unfolds on screen. One boy disappears under the desk to remove the computer's network cable then sits again and reboots the computer. He is now able to browse online without being restricted by the school firewall.

The boys continue for 15 minutes or so until the teacher pops his head in the door. He catches a few quickly flicking between their games, 'Grand Theft Auto: San Andreas', and their schoolwork, and warns them about what will happen if they don't get back to their classwork. Less than 15 seconds after he has gone, they are back running urban streetscapes and driving pimped humvees.

Extract from fieldnotes, Playford, September 2006

There are many ways phenomena and context might be understood in this classroom scene: each dimension can be traced in the setting, activities and relationships unfolding in the computer lab. For example: the physical space, the furnishings, hardware and software; the school's curriculum and technology policies and the expectations the boys are under as members of this class with this teacher; norms of behaviour when no teacher is present (but when another adult is); prior experience the boys bring to school; elements of gamer culture and wider social discourses about young people's use of technology. These are only a few of the many factors that might constitute the interplay between phenomena and context. In analysis, the task is not to

render the scene complete, but to find amongst the richness and possibility that which is most salient: to describe and trace what seems most worthwhile in connection with the concerns of the study.

Negotiation in ethnographic case-study research

The word in language is always half someone else's. (Bakhtin 1981: 293)

In most cases the decision [about case focus] is negotiated, informed by the individuals, educational programme, and local politics of the site ... The decision about how to angle one's vision is collaborative. (Dyson and Genishi 2005: 14)

There are two aspects of negotiation relevant here. One has to do with the kind of negotiation mentioned in the introduction to the thesis (see 1.4), the other was briefly noted at the beginning of this chapter (see 4.1). In the first instance, the process of negotiation refers to dialogic struggles over meaning which occur through language and other semiotic systems (cf Bakhtin 1981) and which involve competition over various forms of capital in particular fields (Bourdieu 1990) or for social goods within and between particular discourses (Gee 2005). This idea of negotiation is central to the study. The other aspect of negotiation describes the tension between design and discovery in qualitative research (see 4.1). In this section, I discuss how these two processes were relevant to the design and execution of the study and to an understanding of the phenomena under investigation: young people's use of new technologies in schools.

Two examples which help illustrate this dual framing of negotiation are presented below. In both instances young people negotiate aspects of their social and cultural activities: their involvement in the research study and the unspoken agreements that allow them to have their phones in class even though they are banned in school (see 7.5). The first instance, drawn from my research journal, records a scene from a day spent interviewing students at Basso School (see table 4.1 and section 5.4):

Today while interviewing Sarah, Kylie, David and Rob, time got away from us and we were caught by the bell. The conversation had been lively and rich and I was sad to see it end. Stephanie tentatively suggested we keep going and not worry about the next class, 'It shouldn't matter too much, as we are with you. You're a teacher, right?' The others quickly agreed sensing an opportunity, 'And we'd be helping you with your research.' Not surprisingly, they were all willing to skip their next class to continue our conversation. I was outvoted and willingly acquiesced.

Extract from research journal, June 2006

The second instance is from an interview conducted at Bankston School (see table 4.1 and section 5.4) with a group of five students who are discussing the school's policy of banning mobile phones:

1. SB So, that's the school policy, but what actually happens? So most people bring their phones anyway?
2. All Yeah
3. Jim Some teachers are fine, Mr Mac won't mind, a lot of teachers won't ()
4. Tania As long as you keep it on silent most teachers don't mind
5. Liz I think they mind but just as long as you're not using them
6. All Yeah
7. Jim If you're just sitting there (using a phone) then they'll get told off for it
8. Tania Like the school will say that you will not get them back until the end of the week and they are meant to be given to the principal or the coordinators or something but most teachers give them back to you at the end of the period so, or at the end of the day
9. Liz Yeah they don't really mind a whole lot
10. Jim The real issue with that is that it's wasting time in class and kids aren't focusing
11. Ryan Yeah
12. SB That's the argument?
13. Liz If you bring it to class and don't use it//
14. Jim There's no issue
15. Mary Yeah

Extract 4.3 (Bankston)

In these two examples, motivations, agendas, power relationships and identities are *negotiated* through language and text, spoken and unspoken, and in relation to positions within the field of the school and its complex network of relationships, biographies and histories—what Dyson and Genishi call the 'local politics of the site' (2005: 14). This politics includes, of course, each dimension of context discussed in the previous section.

In terms of the study's design, framing negotiation as a principle of research practice highlights the importance of flexibility and responsiveness. Research is a social enterprise and cannot be done alone; researchers must negotiate (with and against) networks of human and non-human actors in the conduct of their work (cf Latour 2005). These actors include: research participants and those who provide access to

participants and sites; those not directly involved in the research but whose actions can determine how situations unfold, such as participants' friends and family, school timetablers and IT support people, bus drivers, year level coordinators and assistant principals. Non-human 'actors' might include: digital recorders, school policies, computers, the internet and data generation methods. Framed in this way, negotiation is also a kind of collaboration—not enlightened, harmonious effort, but complex mediations between people and 'things' (cf Latour 1993). These negotiations are not background variables or neutral dimensions of context, but actively shaped and informed the development and trajectory of the study.

In terms of understanding negotiation as a form of navigation of complex networks of relationships, competing interests, histories and discourses, the above examples also show young people actively *negotiating* social and cultural activities. This is seen in the students' suggestion (and in my complicity) that we continue the interview after the bell goes, or in the way they understand how teachers are doubly positioned—by school policies which prohibit phones and by conditions which make enforcing such policies untenable. These young people are not passive research 'subjects'. This view of young people as agentive, active meaning makers underpins and is further developed later in the thesis (see 4.7). The account given here of negotiation points to the importance of researchers thinking and acting 'relationally' (Smith 2005). The study aimed to develop nuanced understandings of the digital literacy practices of young people and proceeded on the understanding that the core of the study was concerned with how people and 'things' are connected and how individual activities interact with broader social and cultural practices.

Using an ethnographic case-study approach

My choice of an ethnographic case-study approach provided not only data collection techniques but also an epistemological and methodological grounding. In summary, an ethnographic case-study design enabled me to:

- focus the research on particular aspects of social life and culture within and across domains and sites, in this case, young people's use of new technologies in and around classrooms and schools
- employ an open, flexible approach to study design, within a limited time frame and to understand context as an interactively achieved phenomena

- generate detailed and ‘particularistic’ data (Merriam 1998) with a variety of methods and to limit demands on participants
- develop flexible frameworks for analysis and reporting (see chapter five).

4.5 Data generation design

In this section, I outline the study’s data generation design: the processes used to recruit schools and participants and the methods used to assemble the data. My aim is to describe what I did, but also to reflect on and evaluate these processes, methods and tools, *ex post facto*. A carefully planned approach to generating data is essential in developing useful and informative perspectives on research questions and enables the researcher to put together trustworthy data. A carefully planned approach is derived from two related sources: (1) theoretical and methodological frames (see chapters two and three and 4.3 and 4.4) and (2) research logistics. Balancing these elements allows the research design to be driven by theory and expressed in method and in practice.

In this study, data *generation* is used to describe the process commonly referred to as data collection. Amassing a dataset is not a neutral process of collecting extant data, but involves actively *authoring* particular accounts, representations or versions of phenomena, in particular times and places, according to particular epistemological positions (cf Baker 1997a; Freebody 2003; Kamler 2001). The active nature of data generation is particularly visible in interviews or observations, where the researcher clearly contributes to the generation of data. This is less obvious when artefacts and documents already ‘exist’ (ie photographs, emails, policy documents). In this case, the researcher still selects and designates artefacts as *data*. As Clifford Geertz (1973) observes: ‘what we call our data are really our own constructions or other people’s constructions of what they and their compatriots are up to’ (p. 9).

Accessing schools and recruiting teachers

I used a four-level approach to recruitment, where (1) potential schools were identified and (2) possible teacher participants in each school were approached. After commitments were established with teachers (3) approval was sought from school principals. It was only after this that (4) students were invited to participate.

To ensure variation across the schools in the study, the following criteria were considered: school sector (state, Catholic, independent); school size (number of students); socio-economic status (determined from ABS data) and geographic location. Although the aim was to include schools that would provide comparable differences as well as commonalities, the use of these criteria was balanced against the challenges of finding suitable schools and willing teachers. A summary of participating schools is presented in table 4.1 and more detailed portraits in section 5.4. I had planned to include six schools in the study but one declined just before data generation began and it proved too difficult to recruit another. This school represented a low socio-economic, working class community and its exclusion meant the study comprised schools located in broadly middle-class neighbourhoods.

TABLE 4.1 Participating schools

	Sector	Students	School SES (a)	Surrounding area SES (b)	Location relative to Melbourne CBD
Bankston	Govt	1100	9	9, 7, 6	North
Basso	Independent-religious	1000	10	10, 10, 10	Inner east
Highview	Govt	800	8	7, 6, 9	Outer east
Middleton	Govt	1500	10	9, 8, 7	South
Playford	Catholic-boys	1500	7	8, 5, 1	Outer north

(a) and (b) School socio-economic status as indicated by the Socio-Economic Indexes for Areas (SEIFA) (ABS 2008a). The SEIFA Index of Education and Occupation summarises variables relating exclusively to education, employment and occupation. In the table deciles are given for school postcode and for postcode areas surrounding each school. A low decile indicates that an area has a high proportion of people without qualifications, without jobs and/or with low skilled jobs. A high score indicates many people with high qualifications and/or highly skilled jobs.

After identifying suitable schools, teachers were approached. At four of the schools—Highview, Bankston, Middleton and Playford—I had existing contacts with English teachers through the Victorian Association for the Teaching of English (VATE). In these schools, after teachers had indicated willingness to participate, school principals were approached for formal permission to conduct the study in each school. At Basso, because I had no prior teaching contacts, I contacted the principal directly, asking for assistance, and was then introduced to a teacher. Teacher participants acted as brokers and their participation was key in enabling access to classes and students. Preliminary visits were made at the end of 2005 with a view to enabling fieldwork to begin in early

2006. Because schools are so distinctive, I did not expect to conduct the study in exactly the same way in each site, so these visits provided an opportunity to fine-tune how the project would run in each school.

Recruiting young people

Young people aged between 15 and 16 were the group of interest for this study. In the Victorian school system this age range corresponds to Year 10, the fourth year of high school education (Year 12 is the final year). This age group was chosen because these young people tend to be:

- viewed as heavy users (or potential users) of popular digital technologies
- a key demographic for the marketing of youth, popular culture and digital technology products
- not fully engaged in senior studies and so not as busy with schoolwork
- sufficiently mature to reflect on and discuss their experiences.

In each school, I visited a mainstream Year 10 English or English studies elective class where I explained the project to students. During the visit I initiated discussion about new technologies in young people's lives to provide students with a sense of the issues the study proposed to examine. I gave consent forms and explanatory statements to interested students or left them with the teacher to distribute. I encouraged them to discuss the project with a parent/guardian and either return the paperwork to me by the postage-paid envelope provided, or to the teacher for later collection. Establishing rapport with student participants proved invaluable for recruiting and sustaining participation (cf Carspecken 1996; Merriam 1998; Stake 1995). After my initial explanation and introduction, I continued to visit classes where I did preliminary observations to orient myself to the particular contours of each site (cf Dyson and Genishi 2005).

Knowing that participants' interest might vary during the study, I recruited at least two students in each school who were willing to participate over the longer term (*core* participants). I also involved students who wanted to participate but who would not commit to full involvement (*casual* participants). Data generation was designed to allow for this differential involvement. At Highview, Bankston and Playford, I was able to recruit a group of core participants as well as a larger group of students who

participated in different aspects of data generation. At Basso and Middleton, I was able to recruit only a core group. Across the schools—except Playford which is a boys' school—the gender mix of participants was about even. My recruitment efforts were successful in that I was able to enlist enough young people within and across the schools to conduct the study as originally conceived. Table 4.2 summarises student participants by school and gender. Detailed student profiles are presented in section 5.5 (see also table 5.1).

TABLE 4.2 Participants by school and gender

	Female	Male	Total
Bankston	4	3	7
Basso	2	2	4
Highview	6	2	8
Middleton	2	-	2
Playford	-	3	3
Total	14	10	24

While there was considerable variation amongst the participants, the study recruited mainly from middle-class schools. As a result, young people from particularly disadvantaged backgrounds were not included. Many studies of young people and technology use the experiences of Western middle-class young people as a baseline. This tendency which has been critiqued represents a limitation in this study (eg Asthana 2006; Koutsogiannis 2007; Prinsloo 2005b; Walton 2007). The digital practices of young people outside the mainstream need attention by researchers, to explore the digital divides and how they mediate young people's literacy education.

Data generation methods: process and reflection

In deciding on data generation methods, I was guided by two considerations: (1) the methods commonly used in ethnographic case study work in language and literacy and (2) my ability to use these methods in the study schools and within the time, resource and expertise constraints of doctoral study. As a result, the study employed the following methods:

- participant observation
- semi-structured group interviews and informal conversations
- researcher and participant diaries
- document and artefact gathering.

My use of these methods allowed me to build a multifaceted dataset that enabled ‘thick description’ (Geertz 1973: 10) of young people’s uses of new technologies in the study schools. I visited each school at least once a month and more frequently when time and schedules allowed. This way I rotated around the five schools regularly, visiting each between once and twice a month over an eight month period. During the other four months of the year I visited schools less frequently but maintained regular contact with students and teachers (via email and IM). During a typical school visit, I observed classes, conducted interviews and spoke to teachers, groups of students and other school personnel. I also took photos and gathered documents. Overall, the interviews proved to be the most valuable way of engaging participants in conversation about their use of new technologies. As a result these conversations have been given priority in the data analysis. Table 4.3 provides a summary of the data types generated.

TABLE 4.3 Data generation summary

	Participant	Teacher	Class	Others (eg school staff, family)
Observation	5-10 hours fieldnotes photographs video	5-10 hours fieldnotes	5-10 hours fieldnotes	
Semi-structured Interviews	2-3 x one-hour group interviews (audiotaped) Informal conversation	2 one-hour interviews (audiotaped) Informal conversation	Informal conversation	Informal conversation
Artefacts	Emails, text messages, IM copy, webpages, photos, video etc	School documents (eg internet policies)		
ICT-media diary	Kept for 2 weeks			

Note: table design adapted from Knobel (1997).

Participant observation

In ethnographic case study, researcher observations form a significant aspect of data generation: all data are mediated by the researcher (Fetterman 1998; Merriam 1998). In this study, participant observation was initially a way of sensitising myself to the school sites. It took time to become familiar with the culture of each classroom and for differences and commonalities across the schools to become visible. Observations also helped me get to know students and gave them a chance to get to know me and the research; I tried to avoid being positioned as an authority figure and linked the study's interests to popular culture and young people's out-of-school interests. I resisted teacherly urges to comment on student behaviour and in informal discussions and interviews I was as non-judgmental as possible about participants' experiences. Fieldnotes were written during most classroom observation sessions and as soon as possible after informal conversations with participants, teachers and school staff. These were recorded in notebooks or on a laptop using a two column format: one column for direct observations in real time and for snippets of participants' conversations, the other column for related comments, reflections and ideas (see appendix A).

In addition to school observations, I had planned to conduct home visits where new technology use at home could be explored. However, gaining access to the homes of participants proved difficult and was largely unsuccessful. Students were more than willing to talk with me at school but my efforts to set up home appointments were rebuffed. Popular discourse and sensitivities around the dangers of unknown adults and of online relationships spilling into real-life may have played some part in students' reticence. This experience offers an interesting perspective on the way home and school are constructed as worlds apart, both by adults and young people (cf Bulfin and North 2007).

Although observations provided limited empirical detail about how students used new technologies, they did provide a chance to confirm hunches about typical school use of new technologies: a conspicuous lack of new technology use was highlighted. Observing regular English classrooms where new technologies were largely absent, help turned my attention towards unsanctioned literacy practices. This in turn generated insight into how young people worked in the cracks around school-

authorised technology practices. This emerged as a key theme in the analysis (see 5.3 and chapter seven).

Headnotes (Sanjek 1990) were also an important data source: the thoughts and impressions not recorded shape recollections as powerfully as recorded notes. Going back over fieldnotes and transcripts, I was able to add impressions not previously recorded. The idea of headnotes suggests that researchers must be vigilant in interrogating both recorded versions of events and unrecorded versions of those same events. Neither represent the 'correct' version of an event but are constructions, revealing as much about the researcher as the participants. This is not to say that fieldnotes and headnotes are unreliable or untruthful (although they may well be), but that they should be weighed against other data sources. Observation is always interpretation.

Interviews

I used semi-structured group interviews, alongside more informal discussions, to set up dialogues with and between participants. While interviews and discussions proved invaluable, they were not straightforward. Interviews are not simply opportunities to gain insight into the thoughts and beliefs of participants, nor are they about participants having their 'say'. In Freebody's terms, interviews are 'cultural practices about cultural practices' (p. 169). In light of such a critique, Carolyn Baker (1997a) offers three concepts for better understanding interviews as data. First, 'interviewing is best understood as an interactional event in which members of a culture draw on and rebuild their shared cultural knowledge' (p. 131). Second, questions are central aspects of interview accounts which actively shape the interaction between researcher and participant, signalling what can be said and how. Third, data generated in interviews should be treated as shaped accounts of experience, or versions, for this time, place and situation, rather than as transparent windows on participants' worlds. In other words, interviews are occasions when researchers and participants make available to one another 'versions of the state of their belief as it is appropriate to the specific interpretive occasions in which they find themselves' (Freebody 2003: 136).

Conceptualising interviews as *accounts* reframes their usefulness as distinct from tools for gathering 'information'. Interviews also provide insight into how participants construct their social worlds and identities, the kinds of people they imagine

themselves to be and the kinds of communities to which they belong or aspire. In this study, during group interviews young people represented themselves as particular types of technology users and as particular types of students, giving accounts of their choices or practices with reference to being or living in the world in particular ways and not in others.

George Kamberelis and Greg Dimitriadis (2005) argue that group interview or focus groups have advantages. Focus groups tend to allow participants more ownership over interaction in interviews, 'promoting more dialogic interactions and the joint construction of polyvocal texts' (p. 904). They argue that group interviews can help researchers build complex accounts of interactional dynamics between participants. These dynamics often allow participants to 'work off' each other:

Focus groups are invaluable for promoting among participants synergy that often leads to the unearthing of information that is seldom easy to reach in individual memory. Focus groups also facilitate the exploration of collective memories and shared stocks of knowledge that might seem trivial and unimportant to individuals but that come to the fore as crucial when like-minded groups begin to revel in the everyday. (p. 903)

In interviews, I attempted to create spaces where young people could 'revel' in their uses of new technologies both in and around classrooms and schools and construct accounts of literacy events, activities and practices (see 5.2). I invited participants to discuss experiences with common online/offline activities, for example, playing computer games, using IM, paying bills online, making various media and watching television. This technique resulted in two important outcomes. First, group interviews became sites for the 'co-construction of knowledge' (cf Kvale 1996; Mercer 1995) and for the generation of stories and narratives (cf Mishler 1986). This was evident when participants finished each other's sentences, or in their shared recounting of events and activities, or in the constant stream of interruptions, additions, clarifications and disagreements that accompanied consensus building. Second, and as a result of the first, young people gave accounts of events, activities and practices which provided empirical data for understanding their engagement with new technologies.

Core participants were interviewed at least twice, with casual participants mostly interviewed once. Interviews ran between 30 minutes and two hours, with students often willing to continue talking through their breaks (while munching on sandwiches and other snacks). The number of participants in an interview was kept between two

and six. The first interview aimed to produce a biographical sketch of the participants and key moments in their 'digital history': their first memory of a computer, their first mobile phone, what devices they owned, what knowledge and skills they felt they possessed. Discussion also focused on new technologies at school. Subsequent interviews built on the first by exploring attitudes towards the use of technology in schools and practices outside of schools. Artefacts, such as mobile phones, were often used as focal points for discussion: students would handle and indicate particular features on their phones, while recounting literacy events and activities. Interviews were conducted mainly in unused classrooms or computer labs which enabled students to browse and talk about favourite websites (while often complaining about the conditions of school computers). Twenty-one formal interviews were conducted, yielding 14 hours of audio (see appendix B for an outline of the interview schedule).

Although I conducted teacher interviews, I have not drawn on them in a major way in the data analysis. Instead, they have given me a broader context for understanding the young people and a better sense of the issues at each school and the differences between schools. I have used the teachers as cultural experts (see 4.3) enabling me to get a clearer picture of the school, its culture and its students.

Transcripts

Transcripts are theoretically driven representations of speech as printed text (cf Dyson and Genishi 2005; Freebody 2003; Gee 2005). They are never just written versions of interviews, but are accounts based on a researcher's theoretical standpoint (cf Baker 1997b; Mishler 2003). Because speech is far too complex to ever be fully captured in print, transcripts are always selective—highlighting aspects of interaction while dropping others into the background or excluding things altogether. Because theoretical perspectives draw the researcher's gaze towards particular phenomena and away from others, 'transcription is not merely a technical procedure but an interpretive practice' (Mishler 2003: 300) and a 'method of inquiry involving analysis from the beginning' (Baker 1997b: 110).

In listening to audiotapes of interviews, in making the initial transcription, in refining and noting speech details such as emphasis and prosody, in making choices about layout on the page, about punctuation, phrase length, overlapping talk and so on, transcripts slowly take shape as data. One important consideration in the making of a

transcript is the analytical purpose the transcript is to serve. Gee (2005) notes that both 'narrow' (more detailed) and 'broad' (less detailed) transcripts need to be matched to their analytic purposes (p. 106). In other words, transcript detail is not the defining characteristic of validity. More important is how transcripts work in concert with all other elements of the analysis to produce trustworthiness (p. 106).

All interviews were audio recorded and transcribed in full through a number of increasingly detailed iterations. A first transcribing made the interviews available for a general reading, during which particular stretches were selected for more detailed transcription. The study used transcription conventions drawn broadly from discourse analysis and conversation analysis (see Freebody 2003; Gee 2005) (see appendix C for a summary of transcript conventions). As noted above, transcripts comprised the major source of data for the study. Transcript samples are presented in appendix D.

Artefacts and documents

Whenever possible I gathered texts relating to and created by the participants. These included class work, unsanctioned texts created in class (eg photo-shopped pictures), emails, text messages and archived copies of webpages and social network profiles (eg MySpace, Facebook). Pahl (2002, 2004) notes that the textual (multimodal) traces of young people's lives are detailed sources of information about their meaning-making practices, identities and 'figured worlds' (cf Holland, Lachicotte, Skinner and Cain 1998). Formal school documents were also gathered, including statistical and demographic school reports, policy documents and curriculum outlines. These provided a broader context for understanding the participants' practices in particular domains and sites.

Visual data

The study generated a range of visual and multimodal data as another way of building multi-faceted understandings of the participants' new technology use. I took photographs to record configurations of space and environment in and around schools and classrooms, and with permission, took photographs of the participants. I also encouraged them to take pictures of themselves, their friends and anything else they found interesting or thought I might find useful in the context of the study. Some took up this invitation enthusiastically and I received a number of emails containing photos

of new technologies in participants' homes, complete with written descriptions. With permission, I also took regular screen-shots of the participants' MySpace and Facebook pages. I had hoped this visual data would document interactions with new technologies, but they proved more useful as artefacts of particular identities the participants chose to perform, also giving insights into what the participants imagined I would find interesting about their lives and uses of new technologies. I decided not to use this data in the analysis presented here as it broadened the scope too much. Instead, I plan to analyse it and publish it post-PhD. This data requires different analytical tools (eg Kress and van Leeuwen 2001, 2006) which made deferral a necessity.

Research journal

Throughout the study I recorded reflections on my work with participants and visits to schools and neighbourhoods, evaluations of interviews, records of meetings, notes about emerging patterns or themes in the research, ideas to follow-up and concerns about the progress of the research. Knobel (1997) suggests that a critically reflective research journal can assist in strengthening a study's communicative validity and trustworthiness by providing a space for researchers to interrogate their various roles, biases and research expectations. While I found a research journal invaluable in prompting critical reflection on my actions and the developing study, it proved difficult to keep regularly. As a result, my journal contains on average an entry of a couple of pages for every two visits made to schools (see appendix E for sample journal entries).

ICT-media diary

- To gain an additional perspective on the technology and media use of young people, I asked participants to complete an ICT-media diary (cf Roberts, Foehr and Rideout 2005; Snyder, Jones and Lo Bianco 2005). The diary attempted to capture, over two weeks, participants' ICT and media activities, for instance: listening to music, watching DVDs, reading, playing computer games, using a computer for schoolwork. I also hoped the diary could help me better understand:
 -
 - the extent to which participants were multitasking while using technologies
 - where they were using technologies
 - with whom they used technologies

- how long they were typically engaged in such activities
- what their reasons were for engaging in such activities.

Despite the diary being designed so that filling it out required minimum effort, only 10 were returned. Nevertheless, these diaries provided additional material for follow-up during interviews and informal conversations with participants. Appendix F contains sample pages from the ICT-media diary.

Data generation summary

Overall, the data generation design produced a useful range of data (see table 4.3). The semi-structured group interviews proved the most useful, with other sources supplementing these transcripts and collectively building a picture of participants' digital literacy practices in and around classrooms and schools. When compiled, the dataset constituted:

- transcripts
- fieldnotes, research journal, headnotes
- documents and artefacts.

In the next section, I discuss issues of quality and credibility in qualitative research.

4.6 Quality and credibility in qualitative research

Ontological, epistemological and methodological differences between research traditions are frequently expressed as differences between research that is *quantitative* or *qualitative*. Freebody notes that these labels are attached to 'a variety of aims, procedures and outcomes of research methods and dispositions' and underpinned by 'a variety of theories and ideologies about the individual, society and education' (2003: 36). The problem is that neither term is particularly useful; instead of offering a tidy way to categorise and evaluate research, very different forms of research exist *within* each category (cf Freebody 2003; Silverman 2001). So while both orientations remain contested, there have been attempts to identify common characteristics of research within each orientation, especially in the case of qualitative research (eg Bogdan and Biklen 2003; Carspecken 1996; Denzin and Lincoln 2005; Gubrium and Holstein 1997;

Lather 1991; Lincoln and Guba 1985; Mason 2002; Silverman 2001). Part of this task has been finding ways to describe what qualitative research is and does without defining it simply in opposition to quantitative research. In a useful contribution, Freebody (2003) suggests that qualitative education researchers tend to:

- place the notions of participants at the forefront of the particular analytic problem
- take the variety of sites in which educational practices take place as relevant and shaping of interactions in those sites and on an individual's developing capabilities, attitudes and habits
- focus on the jointly produced nature of educational events, or how educational practices are "brought off" interactively by both the experts and novices on a site
- suspend judgements about the quality of educational activities until efforts have been made to fully document and explicate such activities. (p. 40-41)

The study built on this description and adopted two additional perspectives on the qualitative-quantitative binary: one pragmatic, the other tactical. The pragmatic perspective takes up Silverman's (2001) advice that, 'the choice between different research methods should depend upon what you are trying to find out' (p. 25). The tactical perspective notes that choice about method should be guided by the anticipated uses and audience for the research (cf Freebody 2003). Balancing these choices—one about the best way to get research done, the other about how to get research noticed—is the challenge of establishing research quality and credibility. Qualitative researchers face particular challenges in this effort, partly due to the 'diversity and fluidity of cultural practice' (Freebody 2003: 69) and partly because qualitative educational research is not always recognised as legitimate by policy makers, governments and the public (cf Lather 2004). In light of these challenges, Freebody (2003) argues that the onus is on qualitative educational researchers to be more objective, more empirical and more rigorous than other researchers.

While recognising that research should be rigorous, systematic and objective, qualitative researchers have challenged the idea of a singular, stable and objective reality, ultimately knowable through research. So too the idea that researchers can remain aloof and detached from their research and participants. Qualitative researchers argue that researcher reflexivity, the unpredictable nature of social and cultural practice and the situatedness of social phenomena are not adequately accounted for in quantitative measures of validity and reliability. In response they have sought more appropriate ways of judging the quality of research. This has meant rethinking the kind of knowledge claims that can be made about complex social and

cultural phenomena and how qualities such as trust, believability (Lankshear and Knobel 2004b), credibility, consensus and coherence (Lincoln and Guba 1985) and construct validity (Lather 1991) might be used as alternatives to quantitative notions of validity and reliability.

As a result, the study employs two main constructs of research credibility: *communicative validity* and *trustworthiness* (cf Freebody 2003; Lankshear and Knobel 2004b; Silverman 2001). To enhance these aspects in the study, I have used a range of approaches and techniques, including:

- having a coherent study design
- being explicit about the processes and decisions involved in the project
- using multiple sources of evidence
- using analytic induction and constant comparison methods.

These are discussed in more detail below. I also comment briefly on generalisability in qualitative research.

Credibility as communicative validity

Freebody notes that ‘validity is fundamentally about the adequacy of the representation of the social events and practices to which the research project refers’ (Freebody 2003: 69). This is more than the ability to bring to life events and practices observed in the field—although the researcher’s skill in this regard can create readable accounts which draw on narrative and research genres (cf Atkinson 1990). In addition, the notion of communicative validity presses the researcher to present carefully argued interpretations and adequate evidence to support claims (Lankshear and Knobel 2004b).

Effective communicative validity sets up a dialogue of sorts between a researcher’s claims and a reader’s own experience or knowledge of similar settings or phenomena. This dialogue establishes either a confidence in the research and its claims as credible, plausible and sound, or the inverse, as not ‘ringing true’ or ‘in-credible’. This does not mean that issues of validity can be settled by simple reference to a reader’s own experience, as if this is the ultimate measure of credibility. As Gee notes, ‘validity is social, not individual’ (2005: 114). Because researchers situate their studies within

research traditions, research is always ‘juxtaposed to earlier and later work in the field ... [which] allows [the work] to be socially judged and adjudicated’ by a community of researchers and by traditions of research and scholarship (p. 115).

Gee also notes that an account or analysis can have more or less validity—some research accounts or analyses are more or less valid than others. Further, he argues, validity is not a concrete measure and it can ‘go up or down with time as work goes on in the field’ (p. 113). Research accounts are by their nature partial and provisional and analysis is (or should be) always up for evaluation and dispute in light of new knowledge. In accord with this position, communicative validity in qualitative research is enhanced when researchers give readers sufficient access to data and interpretations to enable readers to develop alternative explanations.

To strengthen communicative validity, the following approaches were used in data analysis:

- I employed theory-driven analysis (cf Freebody 2003), meaning I have attempted to show how my analysis is grounded in clearly articulated theoretical approaches (see chapters two, three, four and five).
- I have used longer sections of transcript, including crucial elements such as researcher questions (cf Baker 1997b), to allow readers to evaluate interpretations and form their own. This avoids ‘anecdotalism’ (cf Freebody 2003; Silverman 2001) where telling evidence is used to support researcher views with little engagement with alternative readings.
- Rather than ignore data that do not support my analysis, I have exploited these for their ability to offer new insights (cf Perakyla 1997). This meant looking across the dataset for ‘deviant cases’ (Silverman 2001) and employing analytic induction and constant comparison (cf Strauss and Corbin 1998) to *systematically* evaluate my informed hunches and hypotheses.
- I used participant checks, outside audits and peer review to test tentative interpretations. These occurred in discussions with participants and colleagues in the *Being digital* team, at various conferences, seminars and in a number of peer-reviewed journal articles (appendix G contains details of publications connected to the study).

- Triangulation strategies were used to clarify and augment analysis, not only to check facts or to get closer to 'the truth'. This meant using data to illuminate data (eg interviews extending observations).

Credibility as trustworthiness

For reliability to be calculated, it is incumbent on the scientific investigator to document his or her procedure. This must be established at such a level of abstraction that the loci of decisions internal to the research project are made apparent. (Kirk and Miller 1986: 72)

Reliability in qualitative research is not so much about replicability as it is about the openness and trustworthiness of the researcher's method. Credibility and quality in qualitative research benefit more from transparency and clarity with respect to the 'nature of ... *publicly knowable* and *inspectable procedures*' (Freebody 2003: 68, emphasis added) than from being strictly repeatable. In other words, credibility is enhanced through the researcher's ability to make explicit and to justify procedures and methods followed in conducting the study. When this is done, readers can understand how researchers have moved from research questions to data analysis and to knowledge claims (eg Barton and Hamilton 1998). Studies able to do this well establish a sense of trustworthiness.

Trustworthiness also presses researchers for transparency and candour in describing and explaining inevitable in-practice modifications to the study design. Lankshear and Knobel (2004b) call this trustworthiness quality, *coherence* (cf Lincoln and Guba 1985). The need for coherence places responsibility on the researcher to conduct the study in a trustworthy way, that is, to indicate how and why the researcher's actions and decisions should be read as trustworthy. In many ways this is more difficult in a qualitative study than in a quantitative study (cf Freebody 2003). One reason is that the social world is very different from the natural world: messy, in flux and unpredictable. Its study therefore requires, on the part of researchers, coherence in terms of planning, but also ongoing flexibility. Trustworthiness also refers to *sufficiency* (cf Freebody 2003; Knobel 1997; Mertens 1998). To provide satisfying 'answers' to their research problems, researchers must have enough evidence to support their knowledge claims. Having adequate and sufficient data helps instil confidence in research claims and avoids analysis which is stretched too thinly.

The approaches used to strengthen communicative validity also strengthen trustworthiness. In addition to these approaches, I have:

- clearly documented analysis procedures giving readers access to the intellectual choices made during the research (cf Zuboff 1988)
- used 'low-inference descriptors' in data generation (Silverman 2001: 254)
- employed standardised methods for some processes, ie making interview transcripts.

A note on generalisability

Instead of judging research primarily on its ability to generalise, qualitative researchers tend to value depth of understanding or coming to know a case in detail (cf Stake 1995). Because this kind of research tends to study relatively small numbers of cases, the use of statistical generalisability is inappropriate. As an alternative, in this study I take an approach suggested by Jennifer Mason (2002):

Qualitative research should produce explanations or arguments which are generalizable in some way, or which have some demonstrable *wider resonance*. I do not think qualitative researchers should be satisfied with producing explanations which are idiosyncratic or particular only to the limited empirical parameters of their study. (p. 8, emphasis added)

Mason suggests that qualitative researchers should not shy away from questions of generalisability and that the explanations they produce should have currency beyond the idiosyncratic parameters of a particular study—their explanations and arguments should demonstrate 'wider resonance'. These resonances are connections to other instances, studies, experiences, domains and sites. Establishing wider resonance is also the role of communicative validity (see above). In order to establish productive resonances the study employed a number of complementary approaches:

(1) combining qualitative research with quantitative measures

Being digital survey data (Snyder et al 2008) is used where possible as a 'national check' to determine the representativeness of the case studies and to explore resonances between a national sample and local sites.

(2) comparative generalisability

Data were compared to demonstrate similarities and differences across a number of sites. The study generated data with 24 participants across five schools, all of which were compared for resonance in the development and refinement of assumptions and generalisations. In addition to comparison across sites and cases, generalising *within a case* can also be effective (cf Geertz 1983). When a phenomenon is studied in depth it is possible to examine generalisations and assumptions against a detailed dataset drawn from within a case, often including a wide range of instances generated over time. Generalising within a case does not mean qualitative research is unable to produce and refine generalisations about phenomena outside a case, only that there is value in opening up traditional notions of generalisability rather than assuming that participants or phenomena in one study can stand in place of a larger population.

(3) the concept of possibility

Questions about generalisability in qualitative research are not so much about whether schools, teachers and students are typical, but the extent to which their practices are typical and have resonance with theory, other sites, people and practices. The idea of a 'research resonance' is useful when considering the slippery nature of literacy and the task of mapping literacy practices across domains and sites (see 3.4). Pahl (2006), for instance, argues that artefacts and texts contain traces, or resonance, of practices and identities drawn from across domains and sites. The current study describes social practices with new technologies which are possible and also the possible meanings young people derive from these practices (cf Perakyla 1997). The descriptions of practice in this study, while located in and across particular sites, domains, lives and groups, also exist as possibilities in other sites, domains, lives and groups; that is, they are generalisable as descriptions of what any young person can or might do given a similar array of social, cultural and technical competence (cf Perakyla 1997).

The measures discussed in this section relating to quality and credibility in qualitative research, enable me to make 'defensible interpretations' (Lankshear and Knobel 2004b: 369) about the social and cultural practices of young people in regard to their use of new technologies in schools. Furthermore, by providing 'access to the intellectual choices that are embedded in the research effort' (Zuboff 1988: 243) readers are able

to judge the quality of the work, how it has been undertaken and the knowledge claims made on behalf of the research.

4.7 Considering research ethics

While ethical issues and moral complexities can be found in all research involving humans—the perennial ‘problem’ of obtaining informed consent, for example—ethical concerns take on special significance in research with young people. In these cases, Gill Valentine notes that common ethical issues involving adults are:

refracted in particular ways with child-oriented research because of the unequal relationships of power between adults and children; the way that adults mediate access to children; the legal complexities of children's position as minors; and the particular nature of the environments—school and the parental home—in which researchers usually encounter young people. (Valentine 1999: 143)

These challenges mean researchers have special responsibilities when working with young people. In response to this heightened responsibility, this study approached young people as independent, competent social actors, agents in their own lives (cf James, Jenks and Prout 1998), but also anticipated potential ethical issues arising from the fact that young people are ‘locked into a series of interdependent and asymmetrical or relatively powerless relationships with adults in the context of the household, school and wider society’ (Valentine 1999: 151).

Because it is not possible to anticipate every ethical eventuality, research activities are best grounded in ethical practices (cf Morrow and Richards 1996). This means beginning from a position of respect for participants, where respect ‘becomes a methodological technique in itself’ (p. 100). Such an effort amounts to exercising the ‘ethical imagination’ (Somerville 2007) on the multiple ways research is ‘riddled’ with moral ambiguities (Valentine 1999: 151). The methodological research literature contains many recommendations for ethical research (eg Bogdan and Biklen 2003; Madison 2005; May 1997; Merriam 1998; Morrow and Richards 1996; Silverman 2000). Lankshear and Knobel (2004b) provide a useful list of ethical research principles:

- have a valid research design
- obtain informed consent
- avoid deception
- minimise intrusion

- ensure confidentiality
- minimise risk of harm
- demonstrate respect
- avoid coercion or manipulation
- reciprocate. (p. 103-13)

These principles encourage researchers to consider the effect of their work on others. But listing principles does not guarantee ethical conduct and so research needs to balance the needs of those involved while erring on the side of caution with participants. Below I discuss some of these principles most relevant to research with young people and to the study: (1) respecting participants' knowledge (2) seeking informed consent (3) unequal power in methods and interpretation and (4) reporting and disseminating research. Close attention to these areas of ethical concern is a requirement of the Monash University Standing Committee on Ethics in Research Involving Humans (SCERH) which approved the study (see appendix H for ethics approvals from SCERH, the Department of Education and Training [DET] and the Catholic Education Office [CEO]).

Respecting participants' knowledge and experience

Young people are not an homogenous group but they are often portrayed in the popular media and in research literature (that is, they are portrayed by adults) as vulnerable, incompetent, powerless and irresponsible (see 1.2). As a consequence, young people are often not taken seriously and their views are rarely accorded much weight. It is common, for instance, to read about young people as the dupes of slick consumer marketing or as computer game addicts. In contrast, in this study I view young people as knowledgeable about their own lives and experiences. This is not to fetishise participant 'voice'—as if this is a direct route to truth and authentic experience, or as if 'giving' participants a voice miraculously solves their problems—but to recognise the importance of learning from what young people have to say. Beginning from this position meant listening to and considering participant's accounts of themselves while also understanding these accounts as provisional and as mediated by a wide range of influences (cf Buckingham 2000). Respecting young people's knowledge and experience helped develop trust between myself and participants. Continued access to research sites and participants, quality data generation and future research opportunities rely on researchers building and maintaining trust with those involved in the study.

Seeking informed consent

In this study I took the position that young people's capacity to consent to involvement in the study was not determined strictly by biological age and was 'contextual and relational rather than developmental' (Valentine 1999: 144). Valentine (1999) argues that young people's competence to consent is in fact based on three factors: (1) their understanding of relevant information about the research project (2) their ability to make a choice in their own best interests and (3) the opportunity to make a choice without coercion.

These three factors were addressed in the following ways. I provided a plain language explanation about the study and what involvement meant for participants and their families. This also meant preparing a clear and concise list of what participants were agreeing to do. I also asked both young people and their parents/guardians to give consent on separate consent forms. This allowed young people to consent for themselves and to negotiate their level of participation in consultation with parents/guardians. The consent forms were designed to give the participants choice over their level of involvement (eg whether or not they wanted photos taken). Once obtained, consent was renegotiated throughout the study; while early withdrawal can create problems for researchers, participants must feel free to end their involvement at any time. Appendix I contains examples of explanatory statements and consent forms.

Unequal power in methods and interpretation

Research with young people invariably involves negotiating relationships of unequal power. The different capacities of adults and young people—physical strength and size, experience and knowledge, political and economic status—combined with the way society is oriented towards the satisfaction of adult needs, means it is naive to believe these differences can be ignored. These differences are best considered in the design of a study and efforts made to reduce negative effects. There are two main concerns in relation to unequal power: the 'method problem' and the 'interpretation problem'.

Social researchers working with young people argue that some data generation methods developed in use with adults can disadvantage young people (Valentine 1999). For example, formal interviews and questionnaires tend to privilege relatively high verbal or written abilities and because young people have varying levels of

expertise in these areas some may feel alienated when such methods are used (which is true for adults as well). Working around this problem may require alternative methods better suited to younger participants, whatever the age: role playing, drawing or photography in the case of young people. Another strategy is to avoid over reliance on any one data source. Unequal power is also manifest at the data interpretation and writing up stage (Mayall 1994; cf Morrow and Richards 1996). Because this research stage mostly occurs after researchers have left the field, young people have little chance of involvement apart from opportunities provided by researchers. Commonly used strategies include having participants review and comment on transcripts or draft reports and becoming actively involved in data generation and interpretation.

Although unequal power dynamics undoubtedly exist, their operation is not straightforward. For instance, young people have been recruited as researchers and taught to conduct interviews and to make research claims based on evidence (cf Egan-Robertson and Bloome 1998; Heath 1983; Moss 2001; Yeager, Floriani and Green 1998). In addition, Valentine observes that young people's high exposure to modern media cultures means many show an understanding of methods such as interviewing (1999: 150). She notes that many young people seem less deferential towards adults and may be less inclined to have regard for the 'badge of authority afforded by a university' (Valentine 1999: 150). This became clear to me when visiting a class at the Basso School (see table 4.1 and section 5.4) for the first time; students asked sharp, perceptive questions about the purpose of the research and critically engaged with my assertions about the study's potential benefit for young people.

In working with the challenge of unequal power in method and interpretation, I involved participants in data generation and in some interpretation. This included using them as photographers, as experts in the use of digital recording equipment and, most importantly, as cultural experts on the social practices of young people. While I do not frame this as co-research, it did invite participants to become more active in shaping data generation. With the problems of unequal power in mind, it is worth remembering that adult authority is, in reality, fragile. Young people are savvy and confident enough to use their participation for their own ends, often subverting adult intentions. For example, participants often used group interviews to get out of class and to gain status amongst peers. Aware of the benefits I was accruing from their participation, when I felt they would not be punished, I happily obliged. Ultimately, Valentine notes that, 'it is not so much the method which determines whether research

is adultist or not, but rather the way that it is implemented that matters' (Valentine 1999: 150).

Reporting and disseminating research

Morrow and Richards (1996) warn researchers to be aware of how their research frames and represents young people. As all research makes value judgments about participants, when deficit views of young people are expressed in research, intentionally or otherwise, there is potential for harm. Young people are often targets of moral panic campaigns so that research, which may not have been intended to harm, is co-opted by the popular media or politicians pushing partisan views. In these cases, researchers must bear some responsibility for how their work is used. To avoid these situations care must be taken, particularly during the writing up and dissemination stages, to ensure that the perspectives on young people that inform the study are conducive to constructive uses of the research. Unlike adults, young people have little recourse if they are represented in ways they disagree with and so researchers should carefully anticipate how their research might be used by those outside the field. Research should also be reported back to participants in useful ways. There are a number of groups who might benefit from knowledge generated by the study, including teachers and school administrators. I have already begun to feed the results back through publications, conference presentations, professional school development sessions and preservice teacher education programs.

This chapter has detailed the study's ethnographic case-study orientation and design, noting both intentions and in-practice modifications that are part of any research project. The study design enabled data to be generated and perspectives on the research questions to be pursued systematically and with coherence (see 1.3). The study design also made it possible to have both a well thought-out plan—bringing together epistemology, methodology and methods, and providing a framework to work within—and also to explore Hamilton's proposition that research is a 'fumbling act of discovery' (2005: 288). The study's broad research questions have required pursuing a path of inquiry, with some knowledge of the terrain, while simultaneously laying that same path. In preparation for the data analysis chapters in part three (see chapters six and seven), the next chapter (see chapter five) discusses the study's analysis framework and introduces the research sites and the participants.

5

A framework for data analysis

Analysis, then, is sorting out the structures of signification ... and determining their social ground and import. (Geertz 1973: 9)

This chapter presents a framework for the analysis of the study's data. It describes my method and introduces the research sites and participants (see tables 4.1 and 4.2). First, I outline general approaches to qualitative analysis and more discipline-specific approaches developed within sociocultural literacy studies: literacy events, activities and practices, and discourse analysis. Second, I describe the process I used to move from data generation to a written account of the analysis. Finally, I introduce the research sites and participants to provide a context for the data analysis in part three of the thesis (see chapters six and seven).

5.1 Approaches to qualitative data analysis

Freebody notes that while many ethnographies and case studies 'foreground, usually specify, and sometimes mandate the frame for the conduct of the research process, and for the construction of relationships between the researcher and the researched', on the whole, they show 'comparative disregard for the analytic methods that are to be applied to the data collected' (Freebody 2003: 88). Studies failing to pay sufficient attention to issues of analysis are, he suggests, 'analytically light' (p. 88). While methods for analysing observations, interviews and documents are comparatively well-

developed, the findings from analytically light studies often ‘consist of little more than collages of fragments of observations, interviews and documents, with commentaries that link each fragment to the ongoing narrative worked up by the researchers’ (p. 88). All this is to say that ‘methodological frameworks ... cannot act as substitutes for the provision of accessible analytic methods’ (p. 88). Freebody suggests that the key to the informativeness of a project lies in the transparency and theoretical adequacy of its analytic methods.

Taking Freebody’s criticism and challenge seriously means my use of ethnographic case study must be paired with analytic methods that enable me to make worthwhile and defensible knowledge claims. Constructing a sound analytic framework has meant carefully considering how the data can best be *read* to provide satisfying and adequate answers to the study questions. The following questions, developed prior to the analysis process, have been useful in this regard:

- What theoretical resources generate complex understandings about these data?
- What analytic frameworks disrupt naturalised/normalised ways of thinking about the phenomena?
- How might these analytic frameworks describe and tease out the complexities of the data?

I use both general approaches to qualitative analysis and discipline-specific approaches commonly employed by language and literacy researchers operating within sociocultural paradigms (see chapter two). There are two discipline-specific approaches: first, the conceptual and analytical units *literacy events*, *literacy activities* and *literacy practices* (Barton and Hamilton 1998; Besnier 1995; Pahl 2007; Street 2000) and second, a broadly conceived discourse analysis (Austen, Dwyer and Freebody 2003; Fairclough 1995; Gee 1996, 2005). I begin by discussing general qualitative analysis strategies used and in the following section (see 5.2) outline the language and discourse-specific approach.

Effective qualitative data analysis is dialectical and recursive. The continuing movement back and forth between data, analysis and interpretation is the ‘key logic of inquiry’ for researchers in qualitative traditions (Freebody 2003: 76). Data analysis begins when data generation begins and continues throughout a study. Merriam notes that ‘data collection and analysis is a *simultaneous* activity in qualitative research’

(Merriam 1998: 151, emphasis in original). Working this way enables greater responsiveness to challenges and opportunities as they arise and encourages the development of divergent lines of inquiry (cf Hamilton 2005). In the current study, for instance, interviews built on one another in unexpected ways. As I reviewed each interview in preparation for conducting the next, I refined discussion topics, questions and my own interview practice. I also tried to remain flexible during interviews—essential when working in schools and with young people. Arriving for a group interview at Highview I was greeted by participants and some additional friends who, after hearing about the interview, were keen to participate. They completed the necessary consent forms and joined in, proving to be articulate and informative, moving the discussion into areas that may not have been explored otherwise.

A range of general analysis techniques have been developed and refined by qualitative researchers and are widely used (eg Bryman 2004; Denzin and Lincoln 2005; Lankshear and Knobel 2004b; Mason 2000; Silverman 2001; Wolcott 1994). For example, Glaser and Strauss' (1967; cf Strauss and Corbin 1998) widely cited work on grounded theory outlines a process of analytic induction and constant comparison where data and interpretive hunches are compared with other contrary data to refine assertions. Stake (1995) discusses other common techniques—triangulation, refining and progressive focusing—which are directed at similar work. The processes used in general qualitative analysis might be grouped as:

- memoing, selecting, summarising, coding
- pattern development and category/theme construction
- inductive thinking and reasoning
- constant comparison
- progressively broader analysis
- triangulation and cross checking
- theory building.

Employing common and recognised processes such as these is one way qualitative researchers ensure their findings and knowledge claims are robust and trustworthy (see 4.6). But, while many research textbooks give suggestions for using these processes, details about how researchers employ them in specific studies remains something of a mystery. Although this lack of clarity around analysis processes can be frustrating, these general approaches typically represent an inductive and reflexive

preoccupation with data and how it might both illuminate and be illuminated by theories which offer generative possibilities for understanding the phenomena under study. These general processes were used throughout the analysis of the data (see 5.3). In the current study, these general techniques provided analytical processes but conceptual weight was suggested by work done in language and literacy research, specifically associated with the idea of literacy as a social practice as well as discourse analysis.

5.2 Language and literacy perspectives on data analysis

In this section I detail my use of two ‘tools of inquiry’ (Gee 2005: 6): the concepts of literacy events, activities and practices and an approach to the study of language-in-use drawn from several varieties of discourse analysis. By ‘tools of inquiry’ I mean concepts, methods and techniques, all with theoretical underpinnings, used to describe and tease out the complexities of the data generated by the study design (see chapter four). I draw both tools from sociocultural research on language and literacy and use them as complementary methods in a multileveled approach to analysis. In the two subsections that follow, I describe the theoretical aspects of each approach, showing how each contributes to the overall analysis framework. In the following section (see 5.3), I show in some detail how the analysis proceeded and how the framework was operationalised.

Literacy events, activities and practices

Sociolinguists, ethnographers of communication, linguistic anthropologists, amongst others, have developed a variety of concepts, methods and tools for the analysis of communication in everyday life and in institutions such as schools, homes and workplaces. A classic and still useful example is Hymes’ (1974) analysis of discourse as a series of *speech events* within particular cultural contexts. Hymes used the notion of speech event (and speech act) to identify the component parts of ‘activities, or aspects of activities ... governed by rules and norms for the use of speech’ (p. 52). He argued that speech events are composed of the following elements: situation or setting, participants, ends, act sequence (‘acts’), keys, instrumentalities, norms and genres. These elements form the acronym SPEAKING. Hymes uses this heuristic to analyse speech within and across *speech situations* and *speech communities*. Such interpretative

tools offer units of analysis and a language to describe what is going on in communicative interactions.

Extending Hymes' work, Heath developed an early notion of the *literacy event* in her ethnographic work (Heath 1983) (see also 2.2). Heath employed the idea of the literacy event as 'any occasion in which a piece of writing is integral to the nature of the participants' interaction and interpretative processes' (Heath 1982c: 93; cf Heath 1983: 392). She notes:

Familiar literacy events for mainstream preschoolers are bedtime stories, reading cereal boxes, stop signs, and television adds, and interpreting instructions for commercial games and toys. In such literacy events, participants follow socially established rules for verbalizing what they know from and about the written material. Each community has rules for socially interacting and sharing knowledge in literacy events. (Heath 1982a: 50)

Heath used the literacy event just as Hymes used the speech event: as a unit of analysis and as a methodological tool to identify relatively bounded occasions of interaction around texts and to compare these across different occasions. Heath's concern was to identify how talk, interaction and activity around texts are shaped by culture and history into particular 'ways with words'.

The notion of the literacy event has been further refined by Barton, Hamilton and others associated with the 'Lancaster school' in England (eg Barton 1994; Barton and Ivanic 1991; Barton, Hamilton and Ivanic 2000) (see 2.3). Barton (2001) expands Heath's notion of text in literacy events ('a piece of writing') to include broader semiotic notions of textuality (cf Pahl 2007). Where Heath saw texts as central, Barton argues that texts play different roles in literacy events and can be central, symbolic or implicit and that relations between events may be serial, coordinated and chained, embedded, subordinated or fuzzy (Barton 2001: 99–100). In Hamilton's (2000) study of visual representations of literacy events in newspaper photographs, she finds Heath's notion of interaction limiting. She argues that interaction is rarely straightforward and that texts can actively constitute context and situation (see 4.3). Hamilton develops a more fluid, open notion of the literacy event able to account for passive forms of interaction between human participants and more active notions of text. She develops a heuristic to account for this diversity in literacy events: interactions between people and texts, literacy in the environment, writing on the body, reproductions of documents.

The prototypical Western middle-class literacy event is bedtime-story reading, where a book is integral to the interaction between adult and child and where the literacy event plays a role in enculturation processes (Heath 1982a; Hornberger 2000). Literacy events such as these are ‘strips of social life in which literacy plays a central role’ (Besnier 1995: 5). Like speech events, literacy events can be ‘broken down into ... various components, such as settings, participants and genres’ (p. 5). Researchers have analysed many literacy events, including: delivering a sermon (Besnier 1995); writing a love letter (Ahearn 2004); using a recipe, reading the local newspaper, writing a diary entry, signing a petition (Barton and Hamilton 1998); creating and using a shopping list (Wilson 2000); filling out bureaucratic forms (Jones 2000a); doing project work in the classroom (Pahl 2007); posting a message on an online forum (Black 2008; Thomas 2007); reading a teen magazine and signing a high school yearbook (Finders 1997); writing and passing a note in class (Maybin 2007). Literacy events are as variable and as multiple as the social and cultural practices they are always embedded within.

In this study, literacy events are seen as instantiations of broader literacy practices. For Street (1995) the concept of literacy practices is,

pitched at a higher level of abstraction and refers to both behaviour and the social and cultural conceptualizations that give meaning to the uses of reading and/or writing. Literacy practices incorporate not only ‘literacy events’, as empirical occasions to which literacy is integral, but also folk models of those events and the ideological preconceptions that underpin them. (p. 2)

Street began using the notion of literacy practice in his early work to conceptualise reading and writing activities associated with different domains of social life (Street 1984) (see also 2.2). In the Iranian village he studied, Street identified literacy practices particular to the *maktab* (Qur’anic school), to state schooling and to commercial activity (buying and selling fruit). The notion of literacy practices allowed Street: (1) to understand the differences between reading and writing employed in these domains and the meaning villagers generated through these different practices and (2) to examine how the different practices were connected to forms of identity and associated with differential status and power within the community’s social and religious structures. Importantly, Street notes that ‘similar analyses are possible of other contexts where multiple literacy practices are associated with different arenas or domains of public life’ (Street 2000: 23). This study represents a similar sort of analysis in that it identifies literacy practices associated with school and out-of-school domains

and examines the connections between these literacy practices (see chapters six and seven).

In an attempt to use and extend the concept in their work, Barton and Hamilton (2000) suggest that literacy practices are 'general cultural ways of utilising written language which people draw upon in their lives. In the simplest sense literacy practices are what people do with literacy' (p. 7). While literacy events are often 'regular, repeated activities' (p. 9) which are more or less bounded and observable, literacy practices bring together related literacy events and highlight the way these events are part of larger social and cultural practices which crucially 'involve values, attitudes, feelings and social relationships' (p. 7)—the elements which give meaning to reading and writing events. Maybin (2000) notes that 'literacy practices incorporate both [literacy] events, and people's beliefs and understandings about them' (p. 197). Taken this way, the examples of literacy events listed above—giving a sermon, writing a love letter, or passing notes in class—can also be seen as parts of larger literacy practices. That is, they are all common, repeatable, patterned events, or collections of events, made meaningful only within broader social and cultural practices; each is tied to particular values, beliefs, social norms, cultural knowledge, power and status. With this in mind, it becomes possible to see love letter writing or note passing in class as literacy practices—and as ideological and implicated in power relations.

Hull and Schultz (2001) note that theories of practice were first used in connection with literacy in Vygotskian accounts of literacy (eg Luria 1976; Vygotsky 1978). In this work, the idea of practice signalled a conceptual move beyond the individual as the unit of analysis and towards a socially and historically situated view of the 'mind in society' (see Chaiklin and Lave 1993; Cole 1996; Gee 1992, 2000). Inspired by this early Russian cultural psychology, Scribner and Cole (1981) define a practice as 'a recurrent, goal-directed sequence of activities using a particular technology and particular systems of knowledge' (p. 236). The concept of literacy practice also has theoretical roots in disciplinary traditions concerned with understanding social and cultural practice more broadly, including social theory (Bourdieu 1977, 1990; de Certeau 1984), early formulations of cultural studies (Hoggart 1957; Williams 1958, 1961) and in anthropology (Geertz 1973; Ortner 1984; Scollon and Scollon 1981).

In a recent study, Maybin (2007) argues that the use of the additional analytical unit 'literacy activity' might avoid several problems with the use of literacy events and

literacy practices. These problems are: (1) the difficulty of pinpointing where events begin and finish, or their fuzzy boundaries (2) that 'labelling events can reify particular perspectives' (p. 528), generally the perspective of the person doing the naming and (3) that the notion of event can 'imply a fixed link to an underlying literacy practice' (p. 528) rather than allow for more dynamic and complex connections between events and practices. To avoid these problems, Maybin employed the notion of literacy activities, which:

did not necessarily instantiate a single coherent social model of literacy or "literacy practice" (e.g. a schooled way of taking and reproducing meaning from specific kinds of texts), but often involved a mixture of schooled and vernacular orientations and values. I would suggest that we need a more fluid and dynamic language of description for children's ongoing meaning-making around texts which may, simultaneously or sequentially, invoke different complexes of institutionalised beliefs and values associated with reading and writing. (p. 528)

Using literacy events, activities and practices as part of my analytical framework has been useful at three levels: conceptually, methodologically and empirically. Conceptually, the relationship between literacy events, activities and practices provides a way to 'articulate the links between individual people's everyday experiences and wider social institutions and structures' (Maybin 2000: 197). Methodologically, links between micro- (events), meso- (activities) and macro-level contexts (practices) provided an opportunity to examine how meanings are made, or dialogically negotiated, in the spaces between (1) individual activities, understandings and identities (2) social events and the interactions they involve and (3) broader sociocultural, historical and technological influences (Maybin 2000). Empirically, using literacy events, activities and practices as units of analysis provided tools to map 'observable patterns of behaviour across events' and across the study schools (Maybin 1998, quoted in Street 2000: 23). More detail is provided about how these concepts were operationalised in section 5.3.

An approach to discourse analysis

Using discourse analysis to analyse human interaction via 'naturally occurring' talk, interviews and other textual artefacts is common in ethnographic case-study research. Discourse analysis methods are used widely in disciplines such as sociolinguistics, systemic functional linguistics and narrative inquiry, and often for studying education related matters. Different approaches privilege different aspects and levels of analysis,

some focusing more on language patterns in speech and conversation (ten Have 1999), others on links between language use and broader social and cultural practices (Gee 2005). In this study, I have borrowed from a number of different approaches to discourse analysis. This has meant developing an approach which allowed me to answer the study questions adequately, analysing language details *and* drawing connections to young people's digital literacy practices. I outline this approach below, first clarifying how discourse is understood in the study.

Kress and van Leeuwen (2001) argue that discourses are 'socially constructed and socially situated forms of knowledge about (some aspect of) reality' (pp. 4, 20). That is, they are forms of knowledge developed in specific social contexts and in ways appropriate to the interests of individuals and groups within these social contexts. These contexts are broad (ie extra-situational) and narrow (ie physical or 'local'), and socially made, both within and outside of 'explicitly institutionalised contexts' (p. 4) (see 4.3). Moving discourse beyond the mode of language, Kress and van Leeuwen argue that 'any discourse may be realised in different ways' because discourses are 'relatively independent of genre, or mode and (somewhat less) of design' (p. 5). For example, social discourses about young people and new technologies (see 1.2) can be drawn on by politicians and policy makers at the national and international level, they can be used in news media, by advertisers and local educational authorities, and they can be present in parent-to-parent conversations around school gates and parent-child dialogue in homes. The take-up of these discourses in different modes, genres, domains and sites shows how 'language-in-use is everywhere and always "political"' (Gee 2005: 1). Here 'political' means 'how social goods are thought about, argued over and distributed in society' (p. 2). Language and discourse are intertwined with ideology and power: they influence who gets to speak about what, where and with what authority (cf Fairclough 1992).

Significantly, discourses are not simply means of representing the world: they also help construct and constitute reality and identities. Kress and van Leeuwen (2001) note that the knowledge embodied in discourses includes 'knowledge of the events constituting that reality (who is involved, what takes place, where and when it takes place and so on) as well as a set of related evaluations, purposes, interpretations and legitimations' (p. 20-1). Norman Fairclough (1992) similarly argues that a discourse is 'a practice not just representing the world, but of signifying the world, constituting and constructing the world in meaning' (p. 64). In this sense, discourses are in 'active relation to reality'

(p. 41). In other words, the linguistic turn in the social sciences signalled a shift from understanding 'reality as preceding language and shaping it' to an understanding of 'language preceding and shaping reality' (Locke 2004: 11).

Gee's notion of Discourse (with a capital 'D') also signals a move towards understanding discourses as more than language bits and signifying practices (see 2.3). In this view, Discourses include language bits (what Gee calls 'discourses' with a lower-case 'd') and extra-linguistic 'baggage', which indexes what others have called communities of practice (Lave and Wenger 1991; Wenger 1998), cultural communities (Clark 1996), practices (Bourdieu 1977, 1990; Barton and Hamilton 1998; Street 1984), activity systems (Engestrom, Miettinen and Punamaki 1999) and actor networks (Latour 2005) (cf Gee 2005). Extending and clarifying his earlier work, Gee notes:

Discourses ... crucially involve (a) situated identities; (b) ways of performing and recognizing characteristic identities and activities; (c) ways of coordinating and getting coordinated by other people, things, tools, technologies, symbol systems, places, and times; (d) characteristic ways of acting-interacting-feeling-emoting-valuing-gesturing-posturing-dressing-thinking-believing-knowing-speaking-listening. (2005: 33)

This way of conceptualising discourse brings together 'minds, bodies, social interactions, social groups and institutions' (Gee 2005: 6).

Just as there are different conceptions of discourse there are different versions of discourse analysis (eg Fairclough 2003; Luke 1996; van Dijk 1985; Wodak and Meyer 2001). These embody different motivations and perspectives on the world and are all potentially useful depending on the researcher's purpose and task at hand. The current study seeks understanding about young people's literacy practices as they relate to the use of new technologies in and around schools. As such my focus is on social and cultural practices and identities. I use discourse analysis to understand how these practices are made meaningful through social interaction and through talk. This requires a discourse analysis approach which understands language bits as parts of larger Discourses (eg Gee 1996, 2005).

In developing his version of discourse analysis (the study of discourse in Discourses), Gee argues that his interests or motivations are twofold:

(a) illuminating and gaining evidence for our theory of the domain, a theory that helps to explain how and why language works the way it does when it is put into action; and (b) contributing, in terms of understanding and intervention, to important issues and problems in some “applied” area ... that interests and motivates the researcher. (Gee 2005: 8)

These two goals speak directly to my own interests and motivations in using discourse analysis in particular and in doing research more generally. There are two reasons. First, they seem to me to be appropriately modest in intent. They do not claim, as more politically explicit varieties of critical discourse analysis (CDA) do, to be a sure pathway to liberation, unmasking social injustice and debunking capitalist hegemony. Social change is not brought about by the critical analysis of texts in academic work. Much of the literature on CDA has an overt radical politics which I believe misunderstands the dynamics and complexities of change, certainly within education. Second, Gee’s goals still recognise the importance of politics and the equitable distribution of social goods in society, but the weight of change efforts is not placed wholly on a research method. Instead, the focus is on *illuminating and gaining evidence* (ie understanding and constructing knowledge about a problem, challenge or issue) and then on *contributing* to challenges such as school reform. Discourse analysis can make a contribution to understanding education problems, but it cannot solve them.

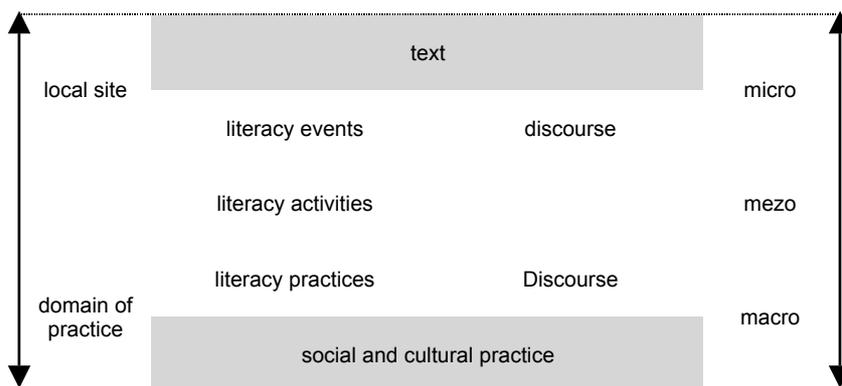
To better understand young people’s engagement with new technologies within school settings, in my analysis I used Gee’s (2005) seven building tasks of language: (1) significance (2) activities (3) identities (4) relationships (5) politics (6) connections and (7) sign systems and knowledge (see appendix J). These categories helped to focus my analysis and enabled me to draw out issues relevant to the study questions. I began by identifying literacy events and activities in the data and analysing the nature of the particular interaction. My analysis was broadened by considering how interactions sat within longer stretches of activity and how smaller units of analysis resonated across the dataset. Where evident, resonances across events and activities provided indicators of broader practices, which were then examined further. This process is described in detail in the next section (see 5.3).

The analytical framework sketched above was employed, in part, to provide ‘theoretical adequacy’ (cf Freebody 2003) for the study’s analysis. It was also employed to negotiate the tension between, on one hand, a focus on the micro analysis of discourse (ie ‘language bits’) and, on the other, the description of broader social and cultural practices within communities. Working with this tension has meant using fine-grained

micro-level analysis while also examining how discourses are embedded and shaped by larger contexts and processes and how these are constitutive of identities and power relations (cf Bourdieu 1977; 1990; Gee 1996; Street 1995) (see also chapter two). The study's analytical tools of inquiry—literacy events and literacy practices and a Discourse approach to the analysis of discourse—allow both these perspectives to be brought together. Gee's theories of Discourse, for example, put literacy events, activities and practices into wider context by showing how these are always embedded within particular Discourses. Abstracted from their associated Discourses, literacy events, activities and practices are meaningless.

Figure 5.1 provides a diagram of relationships between the different levels of analytical foci employed in the study, beginning with 'text' at the micro or local site level and connecting to the larger analytical concern for social and cultural practices via notions such as literacy events, activities and practices and discourse/Discourse.

FIGURE 5.1 Multileveled analysis framework



With these theoretical and methodological approaches to data analysis outlined, in the next section, I describe how this analytical framework was used in practice.

5.3 Outline of analysis method

Discrete bits of data about individuals, behaviours and contexts will become the discursive substance of analytic narratives about a studied phenomenon ... [a] complex social analysis of human choices and social actions, given particular cultural meanings and contextual contingencies. (Dyson and Genishi 2005: 84)

Analysis is about looking for patterns in the data. (Barton and Hamilton 1998: 68)

In this section, I detail the process I used to analyse data. Barton and Hamilton's study, *Local literacies* (1998), has been a particular inspiration. Developing patterns, themes, categories or some other explanatory framework represents a lengthy process of reflection and theorising: a continuing conversation between data, theory, experience and purpose. Each of these elements shapes and is shaped by the others. The researchers' task is to be as clear and as precise as possible about how such conversations take place within their own analyses. The process described below is indicative of the one I used throughout data analysis. Despite my attempts to follow a linear procedure, the process was, of course, anything but linear (cf Hamilton 2005).

Informal data analysis began with data generation. In addition to this, a more focused period of analysis was initiated after the bulk of data had been generated. I undertook a *close reading and re-reading* of all interview transcripts and fieldnotes, line by line, 'noting any words, phrases or patterns of behaviour that seemed relevant' (Dyson and Genishi 2005: 85). As I have indicated already, interview transcripts were central to data generation efforts and were supplemented with fieldnotes, emails and IM transcripts, photographs, webpages and online profiles (eg MySpace) (see 4.5). In the early stages of focused analysis, as I read transcripts and made notes, I relied on my orienting theories and on established themes in the literature to draw my attention to salient instances (literacy events and activities) which might be pursued further and compared against the whole dataset. For instance, the emphasis on home and school literacies in NLS research meant I remained alert to instances where connections or disconnections between school and home were suggested.

Identifying examples of interest in the form of literacy events and activities meant I was coding interview transcripts from the outset. This provided me with a useful overview of the data and a sense of the larger themes which might emerge in further analysis. At this point I also began to construct *pen portraits* of participants by compiling details in the data related to each individual. This meant identifying participants' *ruling passions* (Barton and Hamilton 1998), that is, their preoccupations, or at least what they could talk about in interviews (see 5.5).

Reading, re-reading and memoing allowed existing ideas to be articulated, amplified, changed and modified (Barton and Hamilton 1998). New ideas and themes developed as work (reading, reflecting, linking, comparing) was done with theory and with slowly developing categories. These developing ideas were investigated with more reading

and memoing through an iterative and recursive process. For example, in identifying instances of 'home use' and 'school use', I quickly realised the inadequacy of these categories for capturing examples that cut across the home-school binary. In addition to these categories I used others to identify examples which blurred the boundary. I used the codes 'home-school' or 'school-home' depending on where the literacy event or activity took place (ie the geographic site) and the connections to other sites and domains it suggested. I used the code 'outside home and school' where an event was external to the home-school dyad. In a further example, I coded exchanges where participants expressed views about technology ('views of technology'), but also instances where students commented about themselves as particular types of technology users, ie where they set up particular relationships or identities with respect to technology use ('views of self and technology'). This process amplified, changed and modified the categories.

Reading, memoing and preliminary coding helped identify literacy events and activities which stood out as requiring further analysis. This meant identifying literacy activities that were suggestive of broader literacy practices. I also wrote summaries of interview transcripts and fieldnotes, attempting to capture issues relevant to the study questions. That is, I reflected on how my reading of the data was helping me form fresh perspectives on the research questions. This was a useful analysis process in itself and helped me focus on my original research motivations while allowing room to explore aspects of analysis that might have initially seemed irrelevant. At this point, I used my analysis to prepare a conference paper testing out some of my insights. I argued that it was possible to find 'traces' (Pahl 2006) of home and school literacies in the way participants used new technologies at school, that there was not a hard and fast binary between school and out-of-school literacy practices (cf Moss 2001). The paper was well received and subsequently published in the international peer-reviewed journal *Language and Education* (see Bulfin and North 2007).

After reading and noting, rereading and categorising, I *coded* all the transcripts in detail. This was done by assigning descriptors to the transcripts indicating a stretch of related and relevant activity (see appendix D). I used the preliminary codes as starting points, fleshing them out by adding further codes and themes. For example, to the codes 'views of technology' and 'views of self and technology', I added 'view of self and school' to record instances where students made comments about their attitudes towards school (eg the kinds of student identities they created for themselves). I used

the code 'English use' to tag classwork in English using new technologies and 'English work' for classwork that didn't. I used two related codes to distinguish between different sorts of student concerns about new technologies: 'school issues' referenced problems students had with new technologies at school (eg slow internet, damaged computers), while 'tech problems' was used where students spoke generally about technology and associated social problems (eg cyberbullying, social isolation, pornography). To ensure that I didn't exclude useful instances in the process, initially I kept code categories broad. As my understanding of the data deepened, many of the codes were refined. I initially used the code 'adult' to indicate where participants mentioned a parent or teacher, but later I recoded each of these instances to identify more clearly the relationship: to 'adults' I added 'parents', 'teacher' and 'researcher'.

When this detailed coding was finished, I assembled all the transcripts into a single PDF file and used a PDF viewing program called Preview, available with Mac OS X, to do basic text searches. This enabled quick access to all instances of a particular theme, category or code (see appendix K). To this point in the analysis, my aim was to develop a detailed overview of the data and to format and process the data so they were available for further, more intensive analysis. To describe how this next phase proceeded, I discuss my analysis of students' underlife practices (see chapter seven).

I began the more detailed analysis with the theme and code 'subversion' as a continuation of my examination of the issue in the journal article mentioned above (Bulfin and North 2007). It seemed to offer further analytical potential as I had only gestured towards the issues in the article. First, I identified and grouped all appropriately coded extracts from the data into a separate Word document. My criteria for including an extract as an instance of subversion had been the question, 'Is this an example of a student/s using technology in ways that might be understood, by them or by teachers, as different from school rules, policies, expectations or norms?' I asked this question again as I collated all relevant extracts to eliminate examples which were not useful or which might be useful elsewhere. For example, while some extracts included subversive elements, they highlighted other issues more strongly (see appendixes L and M).

I coded 45 events and activities as subversive. These instances were spread across the study schools. I reread these instances noting links to other themes and codes which might yield insights when examined together. For example, the code 'subversion' had

links with the codes 'tech savvy', 'tech problems', 'school issues' and 'views of self and technology'. Comparing these codes suggested insights into how and why young people might engage in subversive practices with new technologies in schools: a more obvious example was that boredom with school seemed linked to subversive practices.

While doing this comparative, intertextual work across the dataset, I wrote detailed analysis notes for each extract using Gee's 'seven building tasks' as a framework (Gee 2005) (see 5.2). This helped me to balance micro and macro views of the data (see fig 5.1). The outcome was a focus on language, text and discourse, but also on identities, relationships and social practices. These analysis notes formed a base for further reflection and represented an attempt to move beyond surface-level analysis, to 'probe beyond the behavioural descriptions, considering the social meaning or importance of what's happening' (Dyson and Genishi 2005: 85). This involved processes such as identifying repeated words and phrases, examining how significance was signalled by participants, identifying and describing activities and action sequences and, in turn, the negotiation of identities and relationships (cf Hymes 1974). I also asked questions about politics and power and how individual events and instances connected to, or were suggestive of, broader practices. Making this link between the language details of the data and wider social and cultural significance was key to my analysis.

Because one aim of my analysis was to get a clearer sense of the variety of subversive activities, I reviewed the analysis notes and extracts to identify more concretely each literacy event and activity and any larger practices that were suggested. This involved identifying key characteristics, for example, noting that many activities were collaborative and connected to identity. I also looked for clues about participants' motivations as my interest was not only in identifying events, activities and practices but in understanding their significance in the view of participants (ie What do they mean? Why are they done? What functions do they serve?) I reflected on how each example built my understanding of the variety of subversive practices the young people in the study were engaged in and the kinds of 'work' being done through these practices: language work, rhetorical work, identity work etc. I employed analytic induction and comparison to tease out the complexity of the examples and understand their variations and permutations (see 4.6).

As I followed these analysis processes, I was able to sort extracts and instances into like-groups, that is, collections of literacy events and activities that were similar in that

they involved a similar motivation or intent on the part of the participants, a similar practice or activity, or a similar text or technology. I then described and named these groups which were suggestive of larger practices. Through this process, I identified varieties of subversive activity with respect to participants' use of technology. Three broad practices emerged: 'importing', 'workarounds', 'subversion' (see chapter seven). These practices of subversion are closely related and separating them out provided a more nuanced sense of motivation, intent and practice and also the desired or likely effect of each (ie what they were directed toward achieving). Initially, these broad practices were a way to express the relationship between participants' activities and the sites and domains of practice (see fig 5.1). Using these groups gave me a way to see how the things young people did with technology inside school related to what they did outside school.

As I came to understand these three practices better, I refined my descriptions. I continued to read, reread and sort instances between the three categories. My understanding also deepened as I compared each practice and its examples with the other practices and their examples. For instance, I compared those examples in the 'importing' category with those in the 'workarounds' category, noting differences and similarities and cross checking the consistency of my judgements. Where I decided that a particular event or examples did not fit within the developing framework, I was able to either (1) discount the event as a strong example of subversion or (2) modify (often broaden) the practice description to include the example. For instance, there were a number of events where participants across the study schools stored games on school computers for later use. These events could have been placed in either of the three groups of practices: it was an example of importing outside technology into the school, it was a tactical workaround to a school obstacle and it was also a subversive use of school technology. In the end, I discussed it as a subversive use of school technology.

To summarise, the analysis processes described above had two main parts. First, identifying and describing characteristics of young people's digital literacy practices in and around classrooms and schools and, second, theorising about what these practices might mean. The first task was achieved through a process of analytic induction, where data were organised into like-groups of literacy events and activities (ie underlife, relationships, family). Broad practices were then inferred from each group. These practices were compared to trace the variety and detail within and between them, thereby avoiding reification. In other words, I used an iterative and dialogic process of

working towards both broad practices and finer grained accounts of the variety within each practice. The second of the above tasks—theorising what these practices meant—was mostly done when writing about each example and the process of grouping them into common practices. The explanatory force and power of analysis is displayed in connecting events, activities and practices and in elucidating the possible meaning of each. This was my goal. In the next two sections, I introduce the research sites (see 5.4) and the study participants (see 5.5).

5.4 The schools

The dataset comprises case studies of 24 young people aged 15 and 16 in five Victorian secondary schools. The schools were: Bankston, Basso, Highview, Middleton and Playford (see table 4.1). These represent a range of social, cultural and economic environments, all three education sectors (state, Catholic and independent) and suburbs north, east and south of Melbourne's CBD. While they were all diverse in their ethnic composition, each had a majority Anglo student base.

Bankston School

Bankston is a medium-sized government school in Melbourne's northeastern suburbs and enrolls 1100 students from the local area and others who come from further away for the school's 'enhanced studies program'. Bankston is academically focused and does better than average in senior school examination results than other government schools in the area. It has recently installed interactive white boards in selected classrooms (IWB) and upgraded computer facilities. The student mix is diverse with the majority from Anglo and Asian backgrounds. The local area's unemployment (2.8 per cent) was well below the national average of 4.3 per cent at the time the data were collected and 35 per cent of employed persons are in professional work. Almost 70 per cent of occupied private dwellings in the area have internet access (ABS 2008b). While there are pockets of relative disadvantage within the local area around Bankston, there is also a large proportion of people with high qualifications and/or highly-skilled jobs (ABS 2008a).

Basso School

Basso is an elite co-educational independent school in Melbourne's inner eastern suburbs, where some of the city's wealthiest and most exclusive schools are located. Basso has a strong religious ethos priding itself on its pastoral care and focus and enrolls 1,000 students from K-12. The focus is firmly on academic results and it is often amongst the top three or four performing schools in Victoria. Each year almost all senior students receive a university study offer. Students are mainly the children of first- or second-generation immigrant families, many with a European background. The buildings look new and computers and other technology resources are plentiful; the school has its own recording studio and green-screen film technology. Almost 80 per cent of occupied private dwellings in the surrounding suburb have internet access and almost 40 per cent of employed persons are professionals (ABS 2008c). SEIFA data (ABS 2008a) suggests that areas around Basso are highly advantaged, economically and in terms of education and occupation.

Highview School

Highview is a government school in Melbourne's outer eastern suburbs, enrolling 800 students from mainly Anglo and Asian backgrounds. There are a number of other higher status government schools in the area that compete for the same students, so Highview offers a range of programs to attract local students and those in neighbouring areas, including: vocational courses, a literacy program involving university student volunteers and additional support for students with special needs. Technology resources include small computer 'pods' located around the school: classrooms containing about 15 computers, many in various states of working order. The area's unemployment is similar to the national average (4.3 per cent). Approximately 72 per cent of private dwellings have internet access (ABS 2008d). SEIFA data (ABS 2008a) indicates that, in terms of access to economic resources, education and jobs, the local areas are a mix of relatively advantaged suburbs.

Middleton School

Middleton is a large academically focused government school in Melbourne's southern suburbs and enrolls 1500 students from years 7-12. Located in a low-growth housing area, the community is middle-class with unemployment steady on the national

average (4.2 per cent) (ABS 2008e). A significant number in the school community speaks a language other than English at home (29 per cent) and Southeast Asian families make up 12 per cent of the total local population, with 33 per cent of the total population born overseas (compared to 23–27 per cent in the other school localities). Middleton is a ‘show piece’ government school that achieves senior school academic results as good as elite independent schools in the state. It is undergoing major technology upgrades with the development of a purpose-built new technologies centre. The school has some curriculum online and encourages students to access it. Sixty-three per cent of private dwellings have internet access (ABS 2008e). SEIFA data (ABS 2008a) indicate the local areas around the school as relatively advantaged, economically and in terms of education and occupation.

Playford School

Playford is a Catholic boys secondary school situated in a growth corridor on Melbourne’s northern urban fringe, 6km further out from Melbourne’s CBD than Bankston. The school is set amidst spacious, well-kept grounds and enrolls 1500 boys from Years 7–12. Playford is not only academically focused and prides itself on its experience and commitment to ‘boys’ education’. The school has a number of dedicated, well-stocked computer labs some of which are arranged between regular classrooms with clear viewing access from the classrooms into the computer labs. The school serves a wide range of neighbourhoods, some relatively advantaged economically, others extremely disadvantaged, experiencing unemployment at above 7 per cent in recent years (national average is 4.3) (ABS 2008a; ABS 2008f). The student body is ethnically diverse and in the local community 30 per cent of people speak a language other than English. Sixty-one per cent of occupied private dwellings have internet access (ABS 2008f).

5.5 The participants

In this section and the remainder of the chapter, I present pen portraits of the study participants. These are grouped according to schools and in two other categories: core participants—those who were interviewed at least twice and feature more prominently in other aspects of data generation (ie in observations); and casual, or non-core, participants—those who were less involved but still significant to the analysis and

findings (see table 5.1). The pen portraits constitute ‘vertical slices’ through the data, where all details in the data pertaining to an individual have been compiled (Barton and Hamilton 1998). The particular focus in the study is the participants’ use of new technologies in and around classrooms and schools. The portraits give a sense of participants’ ‘ruling passions’ and interests and provide a context for the analysis presented in part three. Where available, I use extracts from the participants’ MySpace profiles to give a sense of how they represented themselves online.

TABLE 5.1 Core and casual participants by school

	Core	Casual	Total
Bankston	Jim Liz Mary Ryan Tania	Ash Margie	7
Basso	David Rob Sarah	Kylie	4
Highview	Ben Danny Leah Lucy Susie	Bella Jen Mandi	8
Middleton	Jess Jian	-	2
Playford	Alex Tim	Chris	3
Total	17	7	24

Bankston School

Jim: ‘I’m interested in computers, I play games, I’m a bit of a nerd.’

Jim is 16 and lives around the corner from Bankston with his parents and two younger brothers (13 and 10). His dad is an engineer and his mum works for Coles Myer. He does well at school and enjoys sports: squash, riding and swimming. He also plays computer games to relax. Eating and sleeping are big parts of his life and he self-describes as ‘a bit of a nerd ... yeah, I love, like, you know, sci-fi and Star Wars, I read books and yeah’. He works part-time at Coles and spends a lot of his pay on ‘good food,

a bit on clothing and stuff, like I bought an iPod and a digital camera'. After school he wants to do something in science, engineering or medicine. At home there is a computer 'for everyone in the family pretty much' and they are kept in the boys' rooms and connected wirelessly to each other and the internet. Jim gets computer gear when his dad buys new equipment and passes the old stuff on.

Jim enjoys making electronic music, computer programming and drawing and designing creative 'stuff' on programs such as Photoshop, Dreamweaver and Acid. He often helps others with computer tasks: 'Some people in our class are pretty computer illiterate ... I've been rung up or asked a number of times how to fix things'. He's involved in a number of online forums and uses RSS feeds to keep up-to-date with his interests, getting regular updates from game, tech and music websites. Jim says he has a MySpace profile but doesn't spend much time on it: 'I can't get on there that often because I've got a million and one other things to do on the internet'. In fact he's sceptical about the usefulness of MySpace, arguing that, 'It doesn't actually serve any realistic purpose ... you get to talk to people and show yourself off'.

At school Jim often uses MSN (a popular instant messaging [IM] program) and games he's smuggled in on USB devices. He's also able to access blocked internet sites and record teachers in class using the digital recorder on his phone—when they're speaking too quickly or when he cannot be bothered writing. He says there are big differences in how he uses new technologies at home and in school: 'it depends on your parents as well, like how much they are going to invest in a computer, or how much they let you do, and how much you know outside of school'.

Liz: x_ladyofsorrows_x

Liz is an intelligent, witty and academically successful 15-year-old. She has two younger sisters, one in primary school, the other an infant. The family has had a Mac since she was seven. Liz says the download limit on their internet plan is two gig a month and that she recently used this up in a week downloading music. She has a pink iPod 'mini' that is 'cooler than everybody else's cause it's vintage,' the scuffs and dents 'add character'. She has about 1000 songs on it at any one time. Liz got a phone in Year 7: 'just at that age when you do more stuff like without your parents, like you go out with friends'. She uses her phone mostly to call her mum to pick her up and uses about \$10 credit a month.

Liz says she uses MySpace to organise to do things with friends as they all have profiles as well. She also uses text messages to organise with friends. She describes MySpace as 'mostly girls and emo guys' and styles herself as 'alternative' or 'emotive hardcore'. She's been on MySpace for a couple of year and has over 250 'friends': 'about 100 of them are just bands'. She laughs as she mentions that her MySpace profile contains 'just stuff like incriminating things, but there's also jokes and drug references and stuff'. Liz started the MySpace group 'Pants-free nation'.

Extract from Liz's MySpace profile

'I ate his liver with some fava beans and a nice chianti'

General: Hugs, the Internets, Music, Purikura, city trips, Clarinet, YouTube, Wii, Milk flavoured Pocky, the British spelling of words, School Uniform and Piano

Music: AFI, Alexisonfire, Avenged Sevenfold, the Blood Brothers, Bring me the Horizon, Dir en grey

Movies: Edward Scissorhands, Gattaca, Kill Bill, Lost Boys, Pan's Labyrinth, Pulp Fiction, Rosemary's Baby, Silence of the Lambs, Sleepy Hollow, Star Wars Episodes 4, 6, 3, 5, 2 and 1 (in that order), Underworld, the X-men trilogy

Television: The Chaser, Daria, Full house, The Melancholy of Haruhi Suzumiya, Nip/Tuck

Hometown: Heidelberg, the not-west part

Mary: 'I'm a writer, well not really, but yeah I write stories and stuff.'

Mary is 16, academically successful and enjoys writing. She listens to music 'pretty much while I'm doing everything except watching TV,' and enjoys 'indie, rock, a little emo'. She plays the piano but intends to quit and both her parents work in banks. The family has three computers: 'One of them is like really old ... that's just in my sister's room but she never uses it. My sister has a laptop, which is also in her room, and I have the big computer'. Mary keeps the family's main computer in her room, and says 'it's awesome'. Mary's sister is in Year 7 at Bankston and they are very close. She is good friends with Jim (see above) and works on a checkout at Coles.

She enjoys prank calling other students during class time and sending messages so their phones ring and they get in trouble. Mary says she enjoyed a multimedia class taken the previous year and uses her skills to touch up photos and make electronic banners and headings for her stories. Mary writes mostly drama: 'Drama a lot. A lot of dramas'. She also says, 'I write short stories, not really like novels or anything' which she posts on her blog. In the past she's written fanfics and posted these online too but these days she prefers her own characters. She's not sure why she writes, but she enjoys the satisfaction of finishing a story and wants to write professionally, perhaps

pursuing journalism. She gets annoyed about URL blocking at school and has had trouble in the past accessing some websites, including book reviews.

Ryan: 'So we download 24/7.'

Ryan is a bright, friendly and academically successful 16-year-old. His father is an electrical engineer, his mother works for a bank and his sister is in Year 12 at Bankston. He describes himself as a gamer and averages two to three hours of gameplay a night with perhaps another one to two hours of chatting and general internet use. He enjoys using xfire, a sophisticated chat program built for gamers. Ryan was five when his father bought the family's first computer, which Ryan says he used to play games. Ryan has a computer in his room and uses it 'pretty much all the time, when I get home from school it goes on'. It has a flatscreen and a one kilowatt surround sound system: 'yep, it's like really powerful'. Ryan says the internet download limit is 10 gig and he brags that he recently used this up in a week. He notes that his ISP is supposed to cap the download speed after this limit is reached but sometimes this doesn't happen—'so we download 24/7'. He downloads games, movies, music, computer programs and American television drama and comedy (*'Prison Break, The OC and American Dad'*). He also has an iPod and a Motorola mobile, which is on '24/7'.

He says that many of his friends got phones in Year 7: 'when you start high school ... cause they [parents] let you start going out and stuff'. Ryan is sceptical of 'whizbang' phone features and says 'you take pictures for the first few weeks then it's like yeah everyone's got it, and then you just stop. Yeah, like I've got, you can play videos on mine and stuff, I was like listening to music for the first two weeks and then you get bored'. His phone cost him between \$200 and \$300 to buy and about \$30 every three months. Ryan says he is more likely to use the home phone to organise things with friends, he might also use email. He has made a website and thinks MySpace is 'a waste of time, I see it as demoralising'. He explains:

It's just the things people talk about and the way that people get to know each other and stuff like that. Like, there's a couple of guys that I've seen who live in Australia, okay, I've never met them but I have heard about them and they have met someone on there and they have got really close on there and they go and travel half way across Australia just to visit them and they've got not job or anything.

He is critical of such behaviour and also refers to the 'Werrabee DVD' where a group of teenage boys sexually assaulted a young girl, film the assault and then distributed it to their friends.

Tania: 'Give me numbers any day.'

Tania is 16, talkative, social and smart. She works part-time at a local café and coaches gymnastics at a YMCA and when not at school works a lot. She has a 19-year-old brother, her mum is a pharmacist and her dad is an Occupational Therapist and both parents are 'cronical game players'. She has a computer in her room which is 'really old' and so it's only there for storage. About school she says, 'I'm not a big English fan, I just read what I'm supposed to, but give me numbers any day'. She texts a lot and is a big fan of calculator games. She's a big film and television fan and collects DVD box-sets of her favourites: *Angel*, *Buffy the Vampire Slayer*, *Friends*, *Couplings*, *Supernatural*, *Dark Angel*, *Sex in the City*. Tania would like to do medicine after finishing school, but would also be happy with science, marine biology or zoology, 'something along those lines, helping things, animals, humans'.

Tania uses programs like Photoshop outside of school to touch up photos and other bits and pieces. Lately she's been getting into the 'old-school' game Minesweeper: 'Yeah, because I'm not very good with words, but numbers I seem to get, so I just like it'. Tania is not a regular online forum visitor but often looks up gymnastic news, information, events and conferences. She is however a regular at devoteddvd.com. She calls herself an internet shopaholic: 'it makes me happy'. She also regularly browses carsguide.com and says 'I've been eyeing off a very nice Chevy Impala'. Tania thinks MySpace and YouTube go together: 'Well, like pretty much if you use MySpace you use YouTube'. Tania has a MySpace profile but doesn't do much with it, in fact she created it only to look at friends' profiles. She uses MSN more often, arguing that 'it is so much better'. Tania jokes that the most interesting thing she has done at school with technology is playing Tetris. She says it was fun learning to program with Flash at school too: 'I made like this gymnast girl who did like backflips'. Like Jim, Jess has recorded teachers in class when she cannot be bothered taking notes.

Ash

Ash, 16, has two sisters, one 13, the other 7. He's a big sports fan and plays cricket, football and basketball and uses 'everyday technologies a fair bit'. One of his first computer memories is using the family Mac to play educational games at about age 6 or 7. 'One day,' he says, 'it just stopped working'. The family has 'quite a few TVs around the house,' all of which are equipped with DVD players: 'we're obsessed with DVD players'. The current family computer was built three or four years ago and is, according to Ash, 'still fairly effective'. They have cable internet and Ash has a fifth generation iPod and first got a mobile in Year 7. He replaced it in Year 9. Ash says he's not the type of person 'that switches [my] phone on and keys in messages every 5 or 10 seconds, I just use it for reference'. He uses prepaid phone cards and says his parents 'are pretty worried about [phone] plans cause if you loose your phone while you're still paying it off, it's like you're just paying into thin air'.

Margie

Margie is 16 and has an older sister in Year 12 at Bankston: she says this is 'fair-to-good' as they get along pretty well. The family has South African heritage and Margie's mum is a radiographer and her dad works for a newspaper. Margie is unsure but thinks the family has a Dell PC—she says she doesn't take any notice of the brand. They also have broadband 'with unlimited downloads'. She got her mobile in Year 7 and says, 'I didn't really want one, but then my parents offered to buy me one. I was fine with not having one'. Margie is on a phone plan and never turns her phone off, just recharges it. It has a camera which she uses quite often. Her sister made her MySpace profile and she has 'maybe 20 MySpace friends'.

Basso School*David*

David, 15, is a keen musician and sportsman and first got a computer when about seven, describing it as 'a piece of crap'. His dad got it off a friend who loaded it with illegal software. David remembers using it to play games such as Cricket 97. He also remembers playing games such as the adult adventure game Leisure Suit Larry. He regularly visits the Australian Football League (AFL) website 'to see how the AFL is

doing' and supports the Carlton Football Club, getting daily news updates from the club's website. He enjoys the Cricket Australia Website as well (baggygreen.com) and regularly gets music and guitar tablature online. He's had a mobile phone since Grade 4—a flip top Motorola—and his parents pay his bill. When asked about bullying on phones, David wonders why people would waste phone credit texting people they don't like. He says he'd call people he didn't like from a landline rather than wasting mobile phone credit. He says he only buys music if he cannot download it.

Rob: 'Do electronic keyboards count?'

Rob, 15, is a chatty and friendly young man, liked by his peers. His parents are strict and his after school time is structured into hour blocks; he must have his homework done before using the computer for other things. He loves his new Motorola 3G phone and is on the \$30 plan which his parents pay as long as he doesn't go over the limit. Like Ryan from Bankston, he uses some features—the MP3 player and camera—but says, others are 'gimmicks'. His phone gets more use on weekends and mostly through text messages. He enjoys playing computer games and if he didn't have such tightly regulated time at home he would play more: 'I'd probably go crazy for a while and then get over it'. He takes his MP3 player wherever he goes, whether on the bus to a friend's house or to the local shopping centre. He regularly downloads music and has no qualms about doing so for free. His first recollection of a computer in the home was at seven—playing 'demo games' supplied on CD with popular computer magazines. He got his first phone in Year 7. He describes digital devices in his home:

We have many players, one portable CD player, three stereo systems, four MP3 players including an iPod, we go through them very quickly, umm, I've got a minidisk player stored away somewhere, countless headphones, four mobile phones, um do electronic keyboards count? Electronic keyboard, electric guitar.

Rob says he finds computer technology 'just logical. I find it very logical' and describes himself as a heavy user: 'I just use it a lot. I use my iPod a lot and I'm on the computer for most of the time. I've learnt how programs work and things like that—not programming, making things and stuff like that, I'm too lazy to do things like that—I just like playing with the settings and things, learning how to work the thing'. Rob says that his main use of new technologies outside of school, other than for homework, are MSN, listening to music, gaming and downloading, all often simultaneously: 'Listening to music while you're downloading while you chat on MSN and play an online game'. Rob outlines the standard MSN conversation: 'Hi. Hi. How are you? Fine. How are you?

Fine. What are you doing? Nothing. What are you doing? Nothing'. He says many IM conversations are like this before people run out of things to say. Rob and David both agree that MSN allows you to get to know someone, a girl you fancy, before calling her.

Sarah

Sarah is a bright and friendly 15-year-old who lives with her mum. She enjoys dancing classes and photography and says, 'I use technology a lot but I'm really bad at it. Like I couldn't do anything professional'. Her main uses of the computer are games and photography. She describes her home new technology resources as 'two computers, one iPod, three stereo systems, just cause we keep going through them, umm, DVD player, two TVs, I think that's it'. They also have cable television. The family's early Mac was 'a brick' you could 'barely do anything on'. However, she remembers the CD-ROM storybooks she read as a young girl where readers interact by clicking on various elements of the page: 'It would make little noises and I would just do it over and over and over and over and over and over'. These days there is a computer on her desk which means she can do as she likes, including wasting time when she should be studying. She often takes pictures to make slide-shows, complete with soundtracks. She uploads many of these to her MySpace. She recently spent a long time making a slide show for friends: she chose the best pictures then used the program iDVD to put it all together. She says she is 'really against downloading music and movies' as it deprives artists of revenue. She later says:

if worse came to worse, I will download something, I mean I can, say I need a song for a project or something and I'm going to CD shops and it's a really old song and so I guess I'd get it off the internet cause I couldn't buy it unless I bought the whole album.

Sarah says that on MSN everything should be taken with a grain of salt. She has 84 'friends' on MSN and enjoys 'pranking people' with friends. They often make up things about themselves to fool people, mostly 'when we're bored'. She also regularly gets 'random adds' where people 'add' her to their contact list: she mimics the online conversation, 'Oh, hi I got your email from a friend of a friend of a friend'. She blocks or ignores those that are annoying. Her phone is 'ancient' and so she mainly uses it just for texting. She observes that although phones come packaged with features, these are often poor quality: she doesn't see the point in using them, especially when you own an iPod and a digital camera. She would get a newer phone but she would have to pay for it, so 'I can't be bothered'.

Extract from Sarah's MySpace profile

Things you may or may not need to know

*I dont have very much self control
I love my friends more then my family
I still buy CD's
There's a guitar under my bed that I can't play
Theres also a skateboard I can't ride
I'd like to learn how to do those things
Crazy and photographed
My phone never has reception
work is a waist of time so i dont do it
People call me wierd
Wierd? or STUPENDIOUS
Music is ennsential
I tend to be more colourful then not
seriously not serious
I waist time
Now that I think about time is never waisted*

Kylie

Kylie, 15, is quietly spoken and successful at school. She likes Justin Timberlake and barracks for Collingwood Football Club. She received a home computer at about age nine. She does not remember what type it was but recalls playing games and using MS Word. Currently, she uses the computer when she has free time, or when she's bored, mainly on weekends. She prefers television to the computer and uses MSN only 'once or twice a week'. Her favourite website is 'probably just hotmail'. While some of her friends collect MSN addresses, Kylie only keeps people in her contact list with whom she enjoys chatting. She has a phone that makes calls and sends SMS but doesn't have many extra features. She believes people are more likely to hassle others on MSN and not as frequently on mobile phones.

Her parents allow her free rein because she does not spend excessive amounts of time on the computer. She sometimes makes home moves and enjoys capturing 'memories' that are important to her and her friends. A recent project involved the family's new dog; she took footage and then cut a short film, using skills learned in multimedia class at school. She has also made a music CD for a friend who was living overseas: together a few friends wrote some 'silly songs', recorded them and made a CD as a gift. Kylie initially appeared not to support illegal music and film downloading but during the study her views softened.

Highview School

Ben: 'Using computers at school is a waste of time.'

Ben, 16, is an above average student but is often unmotivated. He is a self-described computer geek, plays drums and piano, likes the beach and 'hanging with mates'. He is a regular computer gamer and has played LAN games in internet cafés and has an MP4 video player. He has had a phone since Year 7: 'a brick with a green and black screen'. On the weekend, he works part-time at KFC. The family has had computers for a long time, most of Ben's school life. His parents regulate television watching in the home; the kids are not allowed TV before 7.30 pm. Compared to his peers, he does not spend a lot of time on MSN: in his busy life it is not a priority. With his time at weekends given over to part-time work, during the week his parents are keen for schoolwork to be the focus and idle computer time saved for when all work is done. Ben notes, 'my dad stresses that people should only use the internet for schoolwork'.

Ben builds and upgrades his own computers, usually from pieces scrounged from friends and at computer swap meets. This interest began in primary school where he was given a special role as 'assistant computer technician'. He recently bought a TV Card, complete with remote, for \$50. This enables him to watch television on his computer and to 'do whatever I want' in the privacy of his bedroom. The computer he has built for himself is used for games and schoolwork and is connected to a printer. But if he wants to use the internet he uses the family's computer in the study. He does this before his dad arrives home at about 7pm each night: 'we've got until then to do whatever we want'. Ben doesn't have a lot of technological gadgets as his parents encourage him to wait for prices to come down. He notes that living by this advice means you are bound to miss out on the newest gadgets.

He is critical of Highview's new technology resources and policies. He points out the age of some computers as evidence: 'these computers are maybe six or seven years old and probably riddled with viruses and what not and they just don't work'. In his view, 'using computers at school is a waste of time'.

Danny: 'I'm here for a good time not a long time.'

Danny, 16, lives with his mum and older sister. He is a keen BMX rider and snowboarder and says, 'I've always been active so I've always had a mobile phone'. He got his first mobile in Grade 3 because he was catching buses to school from an early age. Dan is not an academic high achiever and prefers 'hands-on, practical subjects'. As a result he is usually enrolled in the foundation English class run for those struggling with mainstream English: he calls the class 'dumb-ass English'. He plans to leave school before Year 12 and look for an apprenticeship, but he is also considered joining the Police force or 'doing sport teaching'. He remembers playing video games such as Commander Keen on the family's first computer—his dad's 'old as laptop'. They eventually bought another machine and installed a connection to the internet a couple of years later. Now they have two computers, a PC and a Mac. Dan says, 'I use the Mac for pretty much everything, schoolwork, games and it doesn't have any viruses so you don't have to worry'. The computers are kept in the study and Dan and his sister use them for downloading songs or reading news, while mum 'does' email.

He watches about two hours of TV a day after school. This usually comprises sports and movies on the family's cable television which is 'awesome'. The family also has a DVD Recorder which is used to record television shows at DVD quality. Dan plays his Xbox 'every now then when I'm really really really really bored'. Sometimes he will just sit and play games such as Grand Theft Auto: San Andreas. Occasionally, Danny and his friends will play 'massive games of Halo and stuff, but that's just like very rarely'. He denies being a typical gamer, citing examples of he and friends playing basketball, riding and skating.

Dan's phone contains a two megapixel camera, an MP3 player and a loud speaker. It also plays movies. He often moves audio files from his computer to his phone via bluetooth and USB. While in class, he sometimes pranks friends, making their phones ring and getting them into trouble. This was something he did in Year 7 and which he now sees as immature. Playing games on your mobile is similar: 'It's a bit Year 7'. Dan uses his phone mainly for texting, but he'll call if he cannot be bothered typing a message. He often uses his mobile for 'finding people' and keeping in touch. He also describes his phone as an 'invisible leash' for his mum: 'she always finds out where I am'. Rather than this being a negative, it can be helpful 'cause sometimes you forget

what time it is!' Dan also has an iPod 'mini' but is frustrated by its unreliability and performance. He listens to 'a fair bit of radio'.

Dan often swaps MSN details with people he meets and MySpace allows him to link up with people who have similar interests. For example, he has contact with many BMX riders on MySpace: 'People from my club and racing and stuff have got all MySpaces so that's how we like talk'. He spends time customising his MySpace profile with a MySpace 'pimper', an online html generator which makes it easier to change elements of his profile. He also uses MSN to coordinate activities with friends and notes that many people network on MySpace through school details. Dan takes his digital video camera with him to most places and enjoys filming and editing videos at home on his Mac. He acquired these skills by experimenting with the software.

Extract from Dan's MySpace profile

The Name is Danny
 Apprentice Plumber
 Im here for a good time not a long time
 live life to the full
 with no regret
 i am a Brother. Son. Friend. Best friend. Boyfriend. Enemy.
 i am a brothers keeper
 Mate For Life
 i will take you for who you are not who you want to be
 i love nicole.
 i will always have a mates back
 be willing to give them a chop
 i always give 100%
 footy, snowboarding, motorcross is what i do
 cars.. are the future
 I aM DAN

Leah

Leah, 16, lives with her parents and younger sister. She enjoys sport and physical activities and would like to do primary school or sport teaching after school. She works part-time at the local K-Mart store and dances in her spare time. Leah describes herself as a 'good student' but acknowledges that she is not always motivated. She has a range of outside school commitments such as her dance classes which means she often feels tired and subsequently 'can't be bothered' with school. Her ability in English is of a reasonable standard but she says the recent focus on writing 'essays' is not as enjoyable as work in previous years.

Leah's dad runs a building-carpentry business and has a computer in the garage which he uses for work. She says, 'everyone has pretty much got a computer except for mum who doesn't know how to use a computer at all'. Leah and her sister don't have many restrictions on their computer use but could not do much even if they wanted to: the computers are in open areas in the house and not in bedrooms. The family has PlayStation and PlayStation2 consoles which are rarely used. Leah says her sister and dad sometimes use them, 'but not as much as we used to'. Like Danny, Leah only plays when she is bored and argues that students her age, including her friends, are mostly over computer games. However, she acknowledges that some of her friends still play games and that it is still something she does, but only 'to fill in time'.

Although Leah used computers early in primary school, completing homework with MS Word and the like, she discovered the internet only in upper primary school. This was also her introduction to MSN. Her dad restricted MSN use until the family bought another computer when Leah began high school. She prefers to meet new MSN contacts through friends, using them as a vetting process, and has also gone on to meet people in real life that she first met on MSN. For a joke she often blocks her sister on MSN. Like many participants, Leah got a mobile phone at the beginning of high school, the transition signalling a greater need, with perceptions of greater responsibility. Leah has an iPod 'nano' and rarely listens to CDs anymore, but she still uses her radio in the morning while getting ready for school. She keeps up-to-date with her dance school via a website where competition results and news are posted.

Extract from Leah's MySpace profile

i'm Leah :) i'm 17 and will be 18 on the 9th of april. just finished year 11 and next year will go onto year 12. i work at kmart knox. i love it and the people are rad. i have the best boyfriend ever. naww ily.

i am: aussie. indecisive. easy going. happy. competitive. easily amused. impatient. a compulsive cleaner. easily distracted. hopeless at singing, sewinwho thinks too much.i like: family. friends. dancing. cheerleading. netball. spearmint. drinking. lindt chocolate. sunbaking. frozen yoghurt. coaching netball. gym. being healthy. driving. fashion. highlighters. my bent ipod. my keycard. good looking boys. organisation. teaching myself to play the piano.

i dislike: waiting. dentists. talking on the phone. makeup. pineapples. nuts. sultanas. arrogance. people with no respect. dirty teeth. blood tests. smoking. needles. people who pull out on learner drivers. being 17.

Lucy: 'At one point we had about eight computers!'

Lucy, 16, lives with her parents and three brothers, one older and two younger. She is active outside home and school with dancing, gym and working as a part-time gymnastics coach. Lucy feels she uses the computer more than she watches television. She has an MP3 player. Her early memories of computers include using simple programs such as *MS Paint*. She describes her computer saturated home life:

At one point we had about eight computers, it was so crazy, but yeah now we've got um broadband, we just got that last, um, in the middle of last year it was, so I've got a computer in my room now and Tom's *((her brother))* got his laptop, we've got two downstairs (.) actually three, and we've got a server so the internet runs through all the computers like a network thing, (.) yeah, so it's a bit crazy *((laughing))*.

She enjoys using her digital camera, which she won in a school chocolate drive, and shares photos online with friends and family. She regularly takes pictures at parties and family events and recently took some at the school swimming carnival. She uses software to manipulate the images. Lucy is signed up to a range of social networking sites that remind her about upcoming birthdays and events. She also uses websites that allow her to send SMS over the internet. Lucy's parents are conscientious and concerned about her schoolwork but are less restrictive than parents of other participants:

My dad only cracks it if I've got like a massive assignment and I'm on MSN at the same time. He'd be like, "Get off that" you now, but if I don't have any homework he doesn't care. I could be on it all night.

Susie: 'I live on MSN.'

Susie, 16, lives with her parents and younger brother and works part-time at an outdoor supplies store at a local shopping centre. In day-to-day life she uses the family computer more than she watches television. She has an MP3 player and has played LAN games at an internet café with a friend. Susie's family only recently bought its first home computer: previously the family used dad's work laptop. She has a video game console in her room but doesn't use it often. Generally, her parents are slow technology adopters, typically waiting for prices to drop on older devices before buying. Susie 'finally' got a phone at 15—late compared with her friends—because her parents 'didn't trust me with one'. Now she takes it everywhere. Despite her regular use of new technologies, Susie feels that she is not confident and relies on trial-and-error

strategies to get by. At school she finds technical 'computer language' difficult and is lost in computer classes.

MSN is a favourite ('I live on MSN') and is usually on as soon as she is home from school. She is not always on the computer but leaves the program running in the background so that her friends can send messages. She keeps an eye out for the blinking MSN message boxes which let her know someone wants to chat. MSN is not allowed during homework but she uses it anyway, keeping the program hidden in the background. This way she can do her homework and allow friends to contact her when her parents are not in the room.

Bella: 'I got into MSN in grade four.'

Bella, 16, is friendly and popular with her friends at school—although some of her teachers express frustration at her lack of focus on schoolwork. She lives with her parents and younger sister and both her mother and father are in full-time paid work. In addition to the typical electronic devices in the home, the family owns four televisions and Bella says she loves TV. She remembers the family's first computer when she was about five or six: it was mainly used for games. These days Bella is the primary computer user at home, mainly chatting online and doing homework. Her mum uses the computer for marketing, her dad reads online news and her sister 'just plays games'.

She says her attitude toward school has changed recently: while in the past her approach to school as 'awesome', changing friendships has meant her motivation has waned. The senior subject she's studying while in Year 10 is proving a challenge and her life is more complicated and messy than in the past. She says that Year 10 and 11 do not matter academically because, 'Year 12 is the only one that counts,' but she also seems anxious about moving into senior school and wonders about her ability to cope with the difficulty of senior classes. She 'got into MSN in grade four' and received her first mobile phone in Year 8. She also has an iPod 'nano' ('I love it') which has meant she listens to the radio less frequently. Bella's parents use her mobile to check in with her regularly. While she says her phone 'sucks' (it doesn't have an MP3 player), it does have a camera and she uses the calendar function 'to keep track of stuff'. On MySpace she is in several groups: 'Bella', a group of girls, and a Batman group.

Jen

Jen, 16, is an outgoing, friendly girl who does well at school and wants to work in Sports Therapy. She lives with her mum, dad and 13-year-old brother, Nathan. Both mum and dad are in full-time paid work. The one computer in the house is often the cause of arguments but much of the time these disagreements are not too bad: Jen says 'we get along, surprisingly'. Her mum is a fan of online backgammon, her dad uses the online TAB and both parents use online banking. Jen says her mum's computer skills are quite good and that her dad 'works in a factory, so the only thing he knows how to do is what he wants to do'.

The computer is in the study. When the family still had dialup internet, Jen had to ask for permission to go online: she says there were 'massive' restrictions. However, things have changed over the years: 'especially since we've grown up and we've got broadband, everything's sort of relaxed. It's just like TV almost'. Until recently Jen was heavily involved in dancing (Leah dances at the same dance school) but has given it up 'because it was getting too much'. Jen says that 'heaps of girls from dancing are on MySpace, and you can just like ask questions or whatever in case you've forgot the times'.

Extract from Jen's MySpace profile

im 16 years young
 brown hair / blue eyes
 i LOVE to dance
 music is pretty good too
 i love my FIGFAM ♥
 samantha is my bestest friend
 but i love the girls at school too
 fitness first knox is the place to be
 huge nights with tash and chels are mint
 im way scared of cockroaches
 i want to be a sports therapist
 im a checkout chick at kmart
 i laugh too much
 ben cousins is hot. i don't care if he's on ice!
 i talk really fast when im excited
 i really love the movie peter pan
 i love to smile :)
 addictions...
 fiji water. palmer's cocoa butter. sunbaking. my trampoline. tennis! my
 new love. vodka. huge nights. high heels. pretty dresses. eyelash curlers. mangoes. ice magic. sticky notes.
 anything rainbow. blue skies. long days
 at the beach. getting text messages. HAMISH and andy. roadtrips.
 performing. laughter. paper scissors rock. summer heights high. sleeping
 in. demetri martin! yoga. long walks with my dog. diamonds. counting
 down the days.
 thats pretty much it...

Mandi: 'I must be the only one in Year 10 without a MySpace!'

Mandi, 15, lives with her mum and brother, Tim. Her parents are divorced and her dad has another family with four kids. Mandi's mum is a web designer and her dad installs blinds and curtains (she calls him 'a blind man'). Her brother Tim is 'more of a computer freak than any of us'. She enjoys fire twirling and spending time with her boyfriend. She is passionate about her horses, riding about three times a week. At school she is interested in psychology, dress-making and design. Between school, part-time work at the local supermarket and other 'stuff', she feels there is not much time for online socialising through MSN and MySpace.

She is not completely sold on computers and is a little wary after recently losing schoolwork due to computer crashes. She used to go on MSN, 'but I just have like better things to do now'. However, she regularly uses online banking: 'I just go to netbank and transfer money. It's pretty cool.' She also uses the internet to keep up with her interests, 'like being a circus freak, there are lots of good stuff about that'. She is currently looking for new stilts and says the internet has been useful: 'there are stores where you can buy overseas and they will ship to Australia'. Mandi says she has played pranks on people in chatrooms and once arranged to meet an online contact at the local shopping centre. She says they never intended to go and were 'just having fun'. Mandi does not have a MySpace profile and expresses a kind of anti-tech cool: 'I must be the only one in Year 10 without a MySpace profile!'

Middleton School

Jess: 'I'm not into this whole technology thing.'

Jess, 16, lives with her foster parents and brothers and enjoys music, soccer and 'my frenz'. She identifies as Christian and attends church regularly. In the last four years she has been at three different schools and is not a teacher's pet. Jess does not like Middleton because she left friends behind at these previous schools. She says teachers do not like her because she's 'rebellious or whatever, cos I'm outspoken, loud. I'm just loud, I reckon that's pretty much it'. Her English teacher describes her as 'quite a law unto herself'. Yet she seems to have plenty of friends and gravitates towards the good-natured, but misunderstood, school misfits. She works part-time at a local pizza restaurant and loves music: 'I'm like deep into music. I'm like addicted'. She prefers the

stereo or radio to most other technologies—except her phone—she would be ‘totally lost’ without her mobile. Her brothers love television but Jess finds music more relaxing, watching TV perhaps once in two weeks. She does hair modeling and wants to be an air-hostess when she leaves school. She also thinks about becoming a youth worker and helping ‘youth in trouble, like kids who have left home and stuff ... I used to be right there, I wasn’t happy’.

At school Jess’ phone is regularly confiscated: ‘because I can’t help it ((*laughs*)), like people will text me in class and I will be like, Aaaagh!’ She goes ‘crazy’ without it as it represents ‘all my sense of communication’ and connection with friends. She records important contact information in her phone and estimates sending about 25 texts a day, often having ‘text conversations’ with friends during school. They are about organising to meet up, but also about maintaining contact by ‘telling lame jokes’ and sharing news and gossip. First thing in the morning, Jess checks her overnight texts: ‘I normally have like 10 messages in the morning’. She chose her phone ‘because it’s a flip phone and it’s sexy and it has a camera and I can record stuff’. By sexy she means ‘small ... like my friends like have these big ass ‘3’ phones and yeah, they’re ugly’. She records ringtones off the stereo and onto her phone. She notes that her phone is mainly used for *receiving* SMS, not sending them, claiming that ‘people just text me a lot. There’s one person who texts me like 400 times a day’. Jess says people use SMS to flirt but she does not take all the confessions of undying love too seriously. She has three SIM cards and has all her numbers saved to a Virgin SIM card, but she likes her Optus deal best, ‘cos like if I pay like \$50 credit then I get \$250 from them’.

Jess uses *LimeWire* to download music and often asks friends to burn music CDs for her. She loves ‘R&B, rap and techers ... the stuff they play at clubs’. She has made her own music with a friend on the computer, mixing ready-made samples with her own recorded voice tracks. She does not own an MP3 player but uses her foster dad’s video iPod. She remembers that ‘the first time I used a computer I broke it. I wiped everything off it accidentally. I was like seven’. She tends to use computers now only ‘when I’m like talking on the internet ... MSN, or to check my emails, yeah I check my emails when I’m bored, then I’ll play Solitaire’. She is often on lyrics.com and enjoys playing flash games at bubblegumclub.com.

Extract from Jess' MySpace profile

Eyy.. Im Jazii.. i live wit billy lol n we g0in Out n0w lmfa0!! Rand0m truu??.. buh ill lucind be l0ving bentlee!!.. uhh.. still g0 2 sk0ol in prahran (Off chapz).. ummm... i have lost of best frenz buh lucinda is numba 1.... skyes number 2 westy cam ilias narin mennan & hani billy ben n ash r all my runnerz up... ummm.... im 18!! Oh yeaha!!! Cant fink of anyfink elz 2 ryt so yeah.... if ya wanna kno mor add me!! Or add me 2 msn.. bogarbaby@ buh if yuu sum sleazy guy dats tryna get in mah pants dnt add me c0z it aint eva g0nna happen s0 dnt b0tha aaight? X0x jaz

Jian: 'I would be devastated.'

Jian, 16, is a studious and intelligent Australian-born Chinese girl. She lives with her parents who run a fish-and-chip shop where Jian helps out part-time. Both her mother and father are university educated and at home the family speaks English and Chinese. Jian is studying senior Maths and French while in Year 10 and says that the pressure at exam time can be high. Computers and television are important new technologies for the family. Jian's parents use satellite TV to get programs from China and her father bought the family's first computer when she was eight. It was a Mac which they had for a long time. Their most recent computer is a year and a half old and is kept in the living room: 'so my parents can keep an eye on me'. The family has broadband. Jian says her mum can not type, but does read Chinese news online. Her dad can type 'but slow one key at a time, stretching out and looking'. In primary school Jian remembers using the computer a lot: typing stories, preparing PowerPoints and graphing on Excel. At high school most work on computers is typing up writing tasks. She says the computers at Middleton are 'really, really slow' and thinks it might be the network.

Jian's phone is from China: 'um I think it's a cheap phone but it looks alright'. Her parents 'wouldn't let me pick a phone cos I'd be picky'. If she had to do without a phone, she says 'oh, it doesn't really matter, I guess, I'd get by'. Her phone is 'mainly for security and sometimes for friends'. Thankfully, her parents do not call her too often, just 'when I have debates, or go out at night late'. She uses *LimeWire* and *BearShare* to download music and anime, her favourite is *Naruto*. She uses her MP3 player everyday, stores music and movies on computer and regularly burns CDs for friends. She says: 'I don't download that many and often I'll delete them after I watch them ... they take up too much space'. She puts the music on CD in data format so she can fit more on the CDs. She says if her computer hard disk drive were to crash, 'I would be devastated'. She argues that people still buy CDs when they want the material artefact—liner notes, posters, etc. Having said this, she struggles to remember the last CD she bought: 'I don't remember because I burn all my CDs'.

Extract from Jian's MySpace profile

jjanee☆ Let's see...I like people, music, sport and anime. I dislike...a lot of things. I am an only child so i am naturally spoilt but i have many other good human qualities like... ANYWAY i can become annoying when i want attention and u ignore me, i become giddy if u crack too many jokes and sometimes i pause between speaking because often i am bored with myself, other times i just laugh for no reason at all. i think i know myself pretty well but they all say u can't perform psychology on urself so...

My interests vary with the people i'm with, in other words im interested in what YOU're interested in ahaha. yes i am annoying like that but i am actually very unique u see...sometimes im very social, other times i might feel like being by myself.... my music is the only thing that is really consistent...actually no i lied. i like softcore rock and alternative stuffs that are peaceful and relaxing to listen to. and somewhere between then and now i have become a fan of an exclusive selection of azn pop ><" which has expanded greatly..., at the moment however my heart melts everytime i hear piano mixed with hiphop. my favourite sports are volleyball, netball, badminton and possibly table tennis. and ZOMG anime! i love dramas and anime and sometimes i cook.

Playford School

Alex: 'School is school ... I just come for an education.'

Alex, 16, has been at Playford since Year 7 and has a pragmatic attitude toward school: 'School is school, just work. I just come for an education'. While the social aspects are fun, he puts up with the hassle of school and teachers because he knows his education is important. He laughs as he says that his family are 'sort of addicted to the phone cause my mum is always on the house phone talking to aunties, cousins and stuff like that overseas. My sister is on the phone to her friends. I'm always on my phone'. The family have a big screen TV with a surround sound system. They used to own a laptop but now have a desktop. Alex also has a PlayStation2 and a Nintendo64. Alex says the family is trying to cut back computer use to save electricity, 'and help the environment'. Since the family bought a plasma TV his parents have been talking about the dangers of radiation:

there's like a high chance of anyone sitting in the room for a long time, in a year or something could get cancer because of radiation. But it's pretty cool at the same time because it's got like surround sound and stuff, so if you're playing a PlayStation game, there is a lot of action and it sounds like you're in the game because the speakers are all around you

Alex's family has owned a computer since he was eight. Currently, the family computer is his favourite device he uses it to listen to his music. The internet and MSN are also important. Rather than television, he watches DVD movies. He believes that the TV would be more important device for the rest of his family. Alex enjoys editing images of cars, manipulating them by adding sports-type customisations. He runs MSN in the

background when he is doing homework on the computer. He has 100 MSN contacts but doesn't know all of them. He says he has a friend with 650 contacts. Alex's mum does not like MSN and would prefer that he speak to friends on the phone. He thinks this might have something to do with the language he uses on MSN. Alex thinks that his parents do not seem concerned about online dangers, noting matter-of-factly that 'anyone who's online gets hassled'.

He has had a phone since Year 7 and has recently bought a new one of which he is very proud. It cost him \$600. He can access MSN but acknowledges that it is a little difficult to type quickly with the mobile. It also has a 'pretty good camera, two megapixel' and a decibel meter. He takes pictures with the phone on special occasions. A \$30 phone card lasts him three weeks, 'if I'm lucky', and he uses SMS to contact girls and friends. He also has a video iPod and watches movies if he is on a long car trip. He uses his iPod as a portable hard disk drive, storing schoolwork, games and other bits and pieces. It was a gift from his dad.

Tim: 'I like English at school, it's pretty cool.'

Tim, 16, has also been at Playford since Year 7. He says, 'I've got a pretty big family, we use a lot of technology and have a lot of technological things in the house'. With a family of eight the computer is frequently in use: 'one person's in university and two in Year 12, and there's me in Year 10, and one in Year 7 ... my parents use it a fair bit as well. So we sort of just rotate around and just sort of put appointments in for the computer whenever we can'. Tim reads a lot and mostly enjoys school: 'it's good to see friends and stuff like that but usually it's just a lot of work'. He also enjoys going out with friends on the weekend. He does not listen to a lot of music.

Tim thinks that at home the computer and the internet are the most important technologies: 'because that's sort of the outside access to everything ... So you can talk to your friends, you can find information for school, you can find information for yourself, all that sort of stuff'. For his family, Tim thinks the TV is more significant, 'because that's where you get news and information ... and then there's entertainment as well so it keeps everyone occupied'. Tim says his parents are relaxed about his computer use and only encourage him to take a break if he is playing his PlayStation 2. His parents trust him online because they 'know who I am ... I only ever talk to friends on the net, I don't go out looking for other people to chat to'. His pragmatic approach to

online hassles means blocking or using an email filter. Having an older brother studying media means Tim has experience with programs used at school: 'Photoshop, Illustrator and all that sort of stuff and all the Microsoft programs'. This seems to have given him some advantage at school in classes such as media and design.

Tim got a phone two years ago, aged 13: 'I didn't really need one previous to that, but now I pretty much can't live without it'. He notes that the phone is looking a bit old and so it is time for an upgrade. He uses a \$30 phone card which lasts about a month: instead of calling he uses the 150 free SMS included with the card. Tim uses SMS to contact 'me mates' many of whom do not go to Playford, so he texts 'every now and then just to see what they did during the day and just check in on em'. There are other technologies at home including 'stereos and MP3s and stuff like that. Got a couple of game consoles which I still play a lot'. Tim says he has not had trouble on MSN or online: 'most of the time you've got your friends on there so it's usually just all in good fun'. Yet he does not believe that MSN has improved his writing. Tim gets regular email updates from Hoyts Cinema, often receiving advanced notice of special movie deals. He enjoys watching DVDs and has made short films in Media class. He adds that he recently used the Playford website when deciding on his senior school subject choices.

Extract from Tim's MySpace profile

Name	Tim
Sing?	Rather burn in hell 4 all eternity
Dance?	Barely
play a musical instrument	Nope
play a sport	Nope
What color is your room?	White
favorite color	Red?
favorite number	7
favorite letter	7?
favorite movie	The Usual Suspects
favorite song	dunno 2 many
favorite cd	don't got 1
favorite animal	Walrus.....hell yeh
most important personality trait	Benevolent, sweet and a nymphomaniac (kidding hehe...although)
do you read?	Yes very much
whats one thing you wish you had ?	Telekinesis or maybe a multimillion dollar idea
do you talk about people alot	Not really
do most people dislike you ?	I spose so
if so is the reason cause you're better looking then them?	lol what a narcissitic question nah im jus a smart ass
whos your idol?	Alan Shore (Boston Legal)
do you like cheese?	Yeh

Chris: 'I'm probably about average I reckon.'

Chris, 16, lives with his parents, two younger brothers and baby sister. He enjoys hands-on, physical activities and likes sports and 'building and wrecking things, anything from models to actually, like, things that work, clocks or anything like that'. He says that 'apart from the fact that school teaches you things you need to know, I just reckon they could do it in ways more interesting and more physical'. In the future he would like to be a paramedic so he is studying science and psychology subjects. He thinks that as a student he is 'probably about average I reckon, because like my spelling isn't the best, but I like writing about things I'm interested in'. He recalls writing about a notorious DVD made by some boys in Werribee containing images of sexual assault and about films and novels studied in English class.

For the family, TV is important: 'the family will sit around and watch shows and everything, and like you don't have to talk so no one gets p'ed off or anything'. Chris feels his PlayStation Portable and his MP3 player are the most important—he finds music calming when stressed about schoolwork and family. He is not a high user of MSN. The first computer the family owned 'was basically for my mum's work, but we were allowed to use it mainly just for homework'. Sometimes they were able to play games. The family bought a new computer a year ago because the existing one was 'old and slow'. They have broadband and Chris uses the computer mainly for homework and downloading songs for his MP3 player. The family owns Gameboys and a PlayStation. Chris and his brothers do not use the PlayStation much anymore and games their parents classify as violent are banned. He recently got a PSP for his birthday and has three games so far. He uses it whenever he can 'which is usually after homework, maybe even before I go to sleep'. He keeps it at home so that it does not get damaged.

These participant profiles provide a context against which the following two chapters can be read (see chapter six and seven). The next three chapters constitute the major analytical work of the study.

PART 3

ANALYSIS AND DISCUSSION

6

New technologies and school-authorized literacy practices

6.1 New technologies in the study schools

This chapter examines how young people in the study used new technologies in schools. In particular, I focus on school-related activities with technologies such as computers and the internet—what I call *school-authorized technology practices*. In the analysis, I identify activities common across the study schools and group these into larger practices which characterise aspects of the participants' engagement with new technologies in school environments. In the following chapter, I examine unauthorised activities and practices (see chapter seven). Tensions between school-authorized and unauthorised practices, and young people's negotiation of them, form key aspects of the analysis in this study (see 1.4). I draw mainly from data generated in focus groups and interviews with participants but also from fieldnotes, observations and informal conversations with the students and their teachers (see 4.5 and 5.3). The chapter has three main sections. In the first, I examine the nature of school-authorized technology practices, what these require of participants and the norms constructed around their use (see 6.2). In the second section, I analyse in detail the challenges and frustrations students experienced with regard to school-authorized practices (see 6.3). Finally, I detail the participants' responses to these practices (see 6.4).

In the data analysis, I pursue two main lines of inquiry: the need for nuanced accounts of young people's engagement with new technologies in schools and with school-authorized literacy practices, and the features and characteristics of that engagement. In particular, the analysis suggests that rather than wholesale disaffection from school practices and technologies, participants experienced a mix of frustration, apathy and ambivalence towards the use of new technologies in school. The relationship between school-authorized use and students' out-of-school use is not a simple mismatch.

6.2 Examining school-authorized technology practices

In the data, 53 coded instances were identified where students discuss new technology use in schools. Many of these instances contained multiple events and activities (see 5.2), so the actual number of instances available for analysis was larger (approximately 70). A detailed analysis of each of these examples identified two broad school-authorized practices (see 5.3): a collection of activities directed at locating, retrieving and repackaging information for school related purposes and a group of activities where students created products and artefacts for school assignments. The *Being digital* survey found that students across Australia reported similar school practices (Snyder et al 2008). The practices cut across school subject boundaries and are suggestive of what students are authorized and required to do with new technologies by virtue of their status as students. Below, I analyse examples of these practices and their constituent activities.

Locating, retrieving and repackaging information

There are two related activities which I group under this practice. The first was commonly described by students and teachers as 'doing research' and the second involved students 'typing stuff up', usually materials and information produced in class or gathered online. Both of these activities are indicative of the school-authorized technology use across the study schools. Below, students from Highview note both these activities as they discuss their schoolwork:

1. SB Okay, what about computer use inside of classes? So tell me about that? Do your teachers use technology? How do they use it? Does it work?
2. Ben Mainly projects

3. Susie Yeah
4. Ben Projects, assignments
5. SB Doing internet research, that kind of thing?
6. Susie Yeah
7. SB Typing up assignments and printing them off? That kind of thing?
8. Ben Yeah
9. SB Is there any other, or could someone give me a detailed example of that? Like a subject and assignment and what you did? Can someone remember (.) a recent one?
10. Ben Yeah, I had a Commonwealth Games assignment pretty recently, fairly long
11. SB What did you have to do?
12. Ben Ah, just () research ()
13. SB And what did you use computers to do in that assignment?
14. Ben Oh, on the internet, Excel, Paint, ()
15. SB So what did you do on Excel and Paint?
16. Ben Oh, we had to like to do a graph and like edit it and stuff
- Extract 6.1 (Highview)

Ben and Susie agree that students in the school use technologies ‘mainly [for] projects’ and ‘assignments’—searching online for relevant information and using word processors and spreadsheets to collate, present and/or repackage information. Ben’s example (lines 10–16) requires the use of the internet, an Excel spreadsheet and the Paint program, all of which were used to modify and rework online material. His use of ‘just’ and ‘stuff’ as modifiers (lines 12 and 16) suggests ambivalence towards this kind of work and to school in general. In a similar example from Bankston, Mary and Jim describe how computers are used in their English classes:

1. SB So, if you did use the computer in English, what would you do with it?
2. Mary Um, we have a couple of sessions in the library and stuff just to research and type and stuff. We don’t really do ()
3. SB Word processing, internet searching, maybe PowerPoint?
4. Jim Yeah, if we are doing like a um a certain story or poetry we have to go and look it up, give a biography and maybe some other works and stuff that has already been done on them
- Extract 6.2 (Bankston)

As Mary and Jim indicate, ‘research’ in this case requires searching online for biographical details and other information on the work or author under investigation. They are not challenged by this kind of work and Mary’s use of ‘just’ (line 2) signals

familiarity with a common and overused task. Picking up a similar point, Rob, from Basso, criticises the information-based nature of his schoolwork:

1. SB I'm interested in what you guys kind of do when you're online, um at home versus what teachers, or what you do in classes at school online, or with computers and the differences, so maybe?
2. Rob For the school, Google and Wikipedia are the favourite sites, cause it's always information

Extract 6.3 (Basso)

My question about differences between online activity at home and at school prompts Rob's assertion that Google and Wikipedia are 'favourite sites' used in classes. His explanation 'cause it's always information' is a comment on the kinds of work required of students and how this 'always' requires gathering information online. Again the implication is that the work is neither challenging nor interesting, at least to him and his friends, because it does not encourage active engagement or connect with students' 'immediate and local worlds' (Doecke and McClenaghan 2005: 249) (see also 3.1).

In addition to online research and information gathering, participants across the study schools reported using computers to 'type stuff up' or word-process their work. From the students' perspective, these activities were indicative of school-authorised technology practices and school norms about what counted as appropriate technology use. In three examples below (see Extracts 6.4–6.6), students discuss technology use in English classes:

1. SB How about English class? Do you ever use technology in English class? What would you do?
2. Ben Probably Word
3. SB Just typing stuff up?
4. Lucy Yeah, just typing like stories or something up, yeah
5. Ben We haven't used the computers in English (this term)
6. Jen This is the first time I've been in this room *((laughter))*
7. SB So what about oral presentations, do you ever use PPT in class?
8. Ben Yeah (most) but not this year
9. SB In the past?
10. Ben Yeah, but not this year
11. SB Okay, well if there is nothing more to say about question one, I'm feeling like not much is going on in class with technologies? Would that be=
12. Lucy =pretty much right?

13. SB Yeah, pretty much right?
14. Susie Unless they bring a TV in
15. SB Yeah, okay, do you watch, do the teachers use the DVD player much or?
16. Lucy Yeah, probably for () or if we are doing something like you have to watch a video and answer questions on it

Extract 6.4 (Highview)

Ben and Lucy note that the most used technology in their English classes is ‘probably Word’ (line 2), used for ‘typing up’ stories. The others agree that there is not much more to say about technology in their English classes ‘unless they bring a TV in’ (line 14). When given time to think, they nominate another staple of the modern English classroom, film. The television and DVD player register as ‘technology’, only as an afterthought (cf 3.1). Ben and Jen’s comments (lines 5–10) also suggest that technology use is not a common feature of English in their school—even in those rather limited activities they named. Rather than being critical of the school for their lack of time in computer labs, Ben and Jen use humour which trades on the idea that it takes their involvement in a university research study to get into a school computer lab. The result is a mix of humour, dissatisfaction and apathy. In a similar example, students from a different class also describe ‘typing up’ and film watching activities:

1. SB What about English classes then? How do teachers get you to use the technology in English?
2. Danny Just write essays, pretty much
3. Bella Technology? Are you talking about technology?
4. Leah We don’t use that much technology
5. Bella Videos?
6. Danny Oh, videos//
7. SB So you watch film, video, DVD, stuff like that=
8. Danny =You have to write essays on computer
9. SB So mainly typing up stuff on the computer?
10. Danny =Pretty much, that’s all we do on the computers, just type essays
11. SB Or if you need to do a bit of background research or something?
12. All Yeah
13. SB What about PowerPoint? Do any of you do that for oral presentations?
14. Leah Not really, oral presentations are just standing up in front of the class with little notes
15. Bella At our school it’s hard to find a computer room, cause like especially if you’re not timetabled in there regularly

Extract 6.5 (Highview)

For these students, using technology in English classes means ‘just typing essays’ or watching videos. Across the dataset, typing up activities such as these were seen as typical of school-authorized technology practices and as evidence that ‘we don’t use much technology’ (line 4). Not surprisingly, the students found these activities inauthentic and were not challenged or engaged. Taken together, the above five examples (Extracts 6.1–6.5), which are repeated consistently across the dataset, suggest that students are most commonly required to use new technologies in ways that are operational (cf Lankshear and Snyder 2000) (see 3.3). This operational approach is clear in the next instance where Ben recounts what happened in an IT class:

1. SB What other kinds of things would you interested in? We’re not just talking about school, but about any kind of technology, anywhere, anytime, so it might be video games, mobile phones, programming, keeping a webpage, whatever
2. Ben Um, yeah actually ()
3. SB (Right?)
4. Ben I enjoy or I like using the programs, but I don’t like learning about them. I don’t care about that. I just use them
5. SB What do you mean when you say ‘learning about them’
6. Ben Like for one of my classes in Y8 we like learned about operating systems and stuff, like Windows 98 and how it differs from 96 (*laughter*)

Extract 6.6 (Highview)

Being told about the differences between versions of Microsoft Windows, rather than having the opportunity to conquer the software by actually using it, is a characteristically operational approach. Ben’s laughter suggests that he understands the schooled nature and real world inappropriateness of such activities, but also that he knows that he cannot do much about changing the way things are done. Although the operational nature of the above examples would seem to confirm critiques of typical school use of technology (cf Bigum 2002; Kist 2005; Lankshear and Knobel 2003) (see also 3.1), the four instances presented below provide more nuanced details about how students negotiated the particularities of such activities (see Extracts 6.7–6.10). In the first example, Danny discusses his struggle with subject English and explains how word processing has supported his writing development. In this instance, Danny’s experience emerges as quite different from that of other students:

1. Danny Yeah, I have like ADHD
 2. SB Do you?
 3. Danny Yeah, and I've got some neuro, I don't know, something like dyslexia (.) as well, but and I have trouble reading (.) and stuff. But like in Foundation English we do a lot of verbal presentations, and like we watch movies and stuff
 4. SB Do you find it's um//
 5. Danny Yeah, it's like//
 6. SB It's beneficial? Are you getting something out of it?
 7. Danny The thing I have, like I can't put words onto paper, like it just jumbles, so that's why computers are a big help as well cause we use a lot of computers in class
 8. SB Do you find it's easier kind of to write that way?
 9. Danny Yeah, it's sort of like easier (.) to type than to write
 10. SB Because you can go back and edit or?
 11. Danny Yeah, and you can just look over
 12. SB You can see it there and move around. Okay, and your other English is the regular one?
 13. Danny Yeah
- Extract 6.7 (Highview)

Danny feels that his difficulties with English are less challenging when he writes with a word processor (lines 7–12). While in the examples provided above (see Extracts 6.1–6.6), 'typing up' activities are perceived to be unimaginative and functional, Danny finds these activities more useful. This maybe because the use of new technologies focused on meeting Danny's specific needs rather than on information retrieval and 'typing up'.

In the next example, Tim describes his experience doing online research and how he chooses appropriate search engines for specific tasks:

1. SB So in a normal English class, we talked about PowerPoints perhaps and//
2. Tim Yeah, normally just, English you don't really use it that often. Occasionally you'll come into a computer lab for research in case you're doing like a project. Recently we did one on Shakespeare so we went into the computer labs and did research on the fifteenth century
3. SB Yep
4. Tim It happens probably four or five times a term, just when you have to research your assignment or something
5. SB So when you say research, you mean the internet?
6. Tim So you just go out and just go on Google and search for em

7. SB So how would you normally do that? Would you mostly use Google or would you use others?
8. Tim Yeah, you can use Google, sometimes, depends on what you're looking for, because Google works pretty good and generally () stuff like um. There's another search engine, Alta Vista, *((he attempts to load the webpage))* I don't know if it will give it to me or not, it should, this one has specific searches for web images and audio and video and that sort of thing
9. SB Specific?=
=Yeah specific sort of searches, but you also go to Google. Google only give you () web pages and images, so this one gives you more opportunities, go to more (3.0) (you can) web search university codes and everything. And you can also do advanced searches for specifics () It's a little more detailed than your Google, but Alta Vista will give you, if you're just specifically looking for a video or specifically looking for a song or something you can just type it in and it might find it for you
11. SB So depending on what you want, you might change?
12. Male Yeah. You can just change between, there's a whole lot of search engines you can use, but Google is the most popular
13. SB Do you learn in English class, kind of how to do better searches? Or usually, no that's usually not
14. Tim Nah, sometimes they'll, yeah let you go at your own devices really, but sometimes they'll give you something like 'Specifically search for this' and it will give you these pages, like 'use keywords like this' that will help you out, or they can supply websites and ()

Extract 6.8 (Playford)

Tim describes occasional research trips to the computer lab, 'just' when there are assignments to be done (line 4). Despite the unchallenging nature of the work, he displays critical reflection in his choice of search engines for specific tasks, noting variations in search results across different search engines. This is not a skill learned in English or in any other class—it seems to have been honed outside of school while doing detailed searching online for particular video and music files. In the third example (see Extract 6.9), Highview students discuss how they creatively negotiate 'doing research' in classes:

1. SB And what about, in terms of your classes, what kinds of activities do you usually do with computers? What do teachers get you to do?
2. Bella Research
3. Leah Yeah, or Maths
4. SB What does research mean? Tell me about an assignment
5. Leah Doing an assignment or something
6. SB Can you give me a specific example? Can you think of a class?//
7. Danny In Olympic sports *((a physical education subject offered at the school))* you had to research a sport and the rules and stuff

8. SB Okay, so what would you do? How would you go about it?
9. Danny Go to Google and type it in
10. Leah Type it up and get all the information you need
11. Danny Table tennis, I don't know
12. SB So you'd use Google and find one, how many sites would you normally use if you were looking for information?
13. Leah It depends on, one site might have all the information you need, but if you've got different sections you'll have to look on different websites
14. SB Yep, and so then what would you do? You'd cut and paste, modify the text a bit or?
15. Danny Nah, just cut and paste
16. Leah Sometimes put it in your own words
17. SB Depends on what the assignment is?
18. Leah If it sounds really smart then you put it in your own words, but if it's alright then just use it

Extract 6.9 (Highview)

As her reaction when asked about new technologies in school, Bella's response, 'research' (line 2), is telling. Leah and Danny provide additional insights, claiming that, depending on the requirements of an assignment and the usefulness of a webpage, finding enough information may require only one website. Further, reworking the text into one's own words is necessary only when the original 'sounds really smart' (lines 15–18) and might raise teacher suspicion. In a similar example, Basso students, Sarah, Kylie and Rob, rework the schooled version of 'doing research' to their own ends:

1. SB So what about English classes specifically? What kinds of stuff=
2. Sarah =Well if you're bored, I find it hard to concentrate just sitting there trying to type something, I have to be at home to type the English assignment that we're doing right now//
3. Kylie Yeah//
4. Sarah Like I sit there and I couldn't think of anything and so usually I can't be bothered playing games cause the teachers notice, so you just sit there and you just type in random stuff on Google. Yeah so you type in stuff like 'Ash' ()
5. Rob Search your friends' names and stuff like [that
6. All Yeah]
7. Rob Or an images search for like, you know, 'Rob' and
8. SB I noticed, uh, Reese Witherspoon, you were kind of =
9. Kylie =Yeah ((laughter))
10. Sarah Oh, yeah, that was actually sort of (0.5) related=
11. Rob =A part of the project were meant to find actors who would

12. SB People who could play in as Australian version of the film?

13. Sarah Yep so I was looking for people

Extract 6.10 (Basso)

The irony is that by ‘typing random stuff on Google’ during class these students still appear to be doing research, whereas they are in fact alleviating boredom. Such examples suggest that while students often complained about being bored and frustrated with school-authorized approaches to new technologies, they engaged with these same school practices in creative and critical ways; in their activity and talk they critique aspects of the tasks that seemed to them inauthentic, deciding against investing too much time or energy. This engagement is sometimes manifest as a type of resistance which is discussed in detail in chapter seven (see also 2.3 and 2.4). The previous four examples (see Extracts 6.7–6.10) also indicate that many of the students were not passive and simply ‘done to’ in school: these young people were able to negotiate and rearticulate mundane school(ed) activities in creative and imaginative ways. They engaged, for instance, in processes requiring nuanced judgements about what might likely pass for typical student work (see Extract 6.9) and about how to ‘pull off’ doing research in class while engaged in other activities (see Extract 6.10).

School-authorized technology practices were largely about ‘doing online research’ and ‘typing up stuff’. There was some evidence of synthesis and reflection (ie about search engine choice) but there was little sense of authentic knowledge creation. During much of their time at school, students felt that they were not creating anything other than school projects, requiring the cutting and pasting together of information. While most of the participants saw such activities critically—as both unchallenging and uninspiring—responses also showed a deep ambivalence. The participants seemed to accept, on one level, that such activities were what schools required of them as students. Because of the frequency of these tasks, they inevitably came to be normalised and regarded as valuable ‘busy’ work. Learning to do such work is to learn to do new technologies at school and, in fact, is an integral part of learning to do school more generally.

Creating products and artefacts

In this section, I discuss instances where students used new technologies to create products and artefacts, material and otherwise, and not only to locate, consume and

repackage them—for example, creating short films and editing digital photographs. At least on the surface, the activities reported here appeared to be more creative and engaging. But this was not always the case. I also present examples which challenge easy distinctions between non-creative (or mundane) and creative (or engaging) tasks. Each of these elements—the creative and the non-creative, the engaging and the mundane—are often played out together, complicating critiques of school-authorised practices as simply engaging or mundane.

Students across the study schools reported using digital cameras (both still and video) and editing photos and images with software such as Adobe Photoshop. The three examples below (see Extracts 6.11–6.13) indicate student engagement with these activities. In the first, Jess discusses her use of digital cameras and other technologies in a previous school:

1. Jess Um, well I did photography at my old school, and so we had to use the computers and the digital cameras and the video recorders and all that all the time, and then we used the computers to edit the photos
2. SB ‘Photoshopped’ it and stuff like that?
3. Jess Yeah
4. SB What kind of editing did you do? Describe it for me
5. Jess Like when we did personal shots we could make em like, change our skin colour or make them look gothic or something, and like put scars on them *((laughs))*

Extract 6.11 (Middleton)

Students altered and manipulated portraits, changing skin colour and adding scars to ‘make them look gothic’ (line 13). At Highview, Bella and Leah, describe similar activities:

1. Leah We edited photos in Media. We used this program and you could like change the colours of the, if it was like a photo or something, you could change the colour behind them
2. Bella Just like Photoshop
3. Leah Yeah, do different textures on it

Extract 6.12 (Highview)

In media classes, Leah and Bella edit photos by changing background colours and adding textures. In both these examples, Leah, Bella and Jess remix and modify their own work and the work of others to make new media products (cf Lankshear and

Knobel 2007b; Mackey 2002; Sefton-Green 1999). In a third example, Tim mentions these same activities and also where he learned the skills to do them well:

1. SB And what about other subjects? I mean you've talked about IT subjects where you program or do other stuff like that
2. Tim Yeah, IT, you can use just about any Microsoft programs, so you can use Excel, Word and Entourage. Media, you also use Photoshop and you can use Movie Maker (at) school
3. SB So you might be editing photos and stuff?
4. Tim Yeah, so you can just edit, or you can do a lot of photo editing and stuff like that in Media, especially photography as well, take a photo and then put it on the computer and you just play around with it and change the letters and stuff, yeah
5. SB So you've learned to do that mostly at school?
6. Tim Yeah, I've got a Mac at home, so I've got a lot of Photoshop and a lot of Illustrator and all that sort of stuff and all the Microsoft programs, and they're are all better than the ones at school at the moment, so I know, I already knew how to do a lot of it, but yeah, we get a pretty in-depth run-through on how to use everything in regard, when we're doing Media, so yeah

Extract 6.13 (Playford)

In Tim's media classes, programs such as Photoshop and Movie Maker are used to edit and 'play around with [images etc] and change the letters and stuff' (line 4). Tim learned many of these skills on advanced software at home but also points out that in class students 'get a pretty good run through on how to use everything' (line 6). Rather than do research and type up work, in these examples students edit, modify and manipulate photos and images with skills learned at home and school. Similar activities are evident in examples below where participants create film, animations and music for their classwork (see Extracts 6.14–6.17). In the first example, Tania, Jim and Mary talk about playing Tetris and creating computer animations using programs such as Flash:

1. SB What's the most interesting thing you've had to do at school with computers?
2. Tania Play Tetris! It's definitely high up there *((laughing))*
3. Jim It would probably be IT for me, we did quite a few new things
4. Tania Flash was fun
5. SB Yeah, learning how to use Flash and programming it?
6. Tania Yeah I made like this gymnast girl who did like backflips, I'm like, yeah, it was like pretty fun when I actually learned how to do it
7. Mary Yeah, it's hard to work with Flash, so, I don't really understand it
8. Tania Someone made a really good soundtrack on Acid, which was just bangings of drums and you'd hear it like *((high pitched laughing))* in the background like cats and weird sound effects all mooshed together

9. Mary Ah, yeah that's cool
10. Tania There is a copy of it if you want to hear it
Extract 6.14 (Bankston)

Tania's initial response is as revealing as it is humorous, comparing school-authorised uses to Tetris. Tetris, a simple block-stacking puzzle game, is hugely popular worldwide (eg IGN Entertainment 2007) and is available almost universally across game platforms, graphics calculators, mobile phones and the like. It is seen as addictive but not exciting—its simple and repetitive game play requires stacking different shaped blocks that fall from the top of the screen at steadily increasing speeds. Tania's tongue-in-cheek claim that Tetris is the most exciting thing she has done in school with technology suggests that her experience with technology in school is like Tetris: dull and repetitive.

Despite her critique, she provides examples of school-authorised practices which she views as more interesting: learning to program Flash and creating a soundtrack. The students did experience some enjoyment and engagement with school-authorised new technology activities, usually when they were inflected with elements of students' outside-of-school practices. Tania's enthusiasm for her Flash animation is rooted in her personal interest in gymnastics (see 5.5), while her humour about the mundaneness of school technologies is linked to her revelling in the 'uncool coolness' of Tetris. To create a soundtrack, her friend uses school resources remixed with elements of 'cool' contemporary techno beats and 'weird sound effects all mooshed together' (line 8). Tania's attitude suggests that students are able to make space for forms of creative engagement and negotiation while still poking fun at the nature of school-authorised technology practices. As argued earlier, this is more than disengagement and is closer to a kind of apathetic ambivalence because, as Tania and other students often noted, 'school is school'. This feeling of ambivalence is amplified in the next two examples (see Extracts 6.15 and 6.16), where easy distinctions between the creative and the mundane are further blurred. In the first, Bella discusses a media class project in which she and a group of friends created a video advertisement:

1. Bella In my Media class we made ads
2. SB Ah, so you kind of picked a product. Tell us about it, what did you do?
3. Bella Um, we advertised a gym, and we did that, and we cut and edited and added music in the background and titles and stuff on the Mac computers
4. SB Yeah, you mentioned that. So there was a group of you?
5. Bella Yes

6. SB And how long did it take you to do it?
7. Bella It took two periods
- [...]
8. SB Were you happy with it? Was it pretty good?
9. Bella It was just pretty pointless
10. SB What do you mean?
11. Bella Ours was just meant to be stupid and funny. It was fun though
12. SB And you got to use technology in a different way? Was it kind of interesting, the assignment, or not?
13. Bella It was fun
14. SB Did you learn some new stuff? How to edit and put music on?
15. Bella Yeah, yeah
- Extract 6.15 (Highview)

Bella notes that while she enjoyed making the advertisement and twice says, ‘it was fun’, she also admits ‘it was just pretty pointless’ (line 9). Although she learned new skills, the task had little value for her beyond the media class. No doubt this had something to do with the final audience for the project—the class teacher and perhaps the class—and the reasons for doing it in the first place. A potentially creative task is made mundane by its schooled context (cf Gee 2004; Rowan and Bigum 2005) (see also 3.1). The idea that creating a product or artefact can be simultaneously fun and ‘pretty pointless’ is again highlighted in the next example where Ben recalls a class IT project:

1. SB Any recent examples of where you had to use technology in class?
2. Ben Ah, my computer programming class
3. SB Okay
4. Ben Well ()
5. SB So you’re writing programs?
6. Ben Yeah
7. SB What kind? HTML?
8. Ben Umm Visual Basic
9. SB Can you give us an example of a program you’ve written recently?
10. Ben Uh, I had to do a sports combo box project, we had to do a combo box and put in all these sports stars, so I put () a description and a picture () and we had to take screen shots and put them in a word document and ()
11. SB Did you find that it was easy?
12. Ben It was kind of easy once we actually worked out what Ms Wallace was telling us what to do
13. All ((laughter))

14. SB And did you find that it was a useful thing to learn how to do?
15. Ben Yeah, well it was useful for class, not sure where I'd use it outside of class
((laughter))

Extract 6.16 (Highview)

Students were required to create a 'sports combo box', or drop-down menu, a common feature of webpages and software applications. Ben notes that the task 'was useful for class, not sure where I'd use it outside of class *((laughter))*' (line 15). Within class, the project makes some sense when students understand what they need to do—it is useful as far as it enables students to progress and understand other activities and content. Outside the classroom, however, Ben struggles to see any relevance: his laughter suggests his experience of the school's 'vertical discourse' is a common one (cf Bernstein 1999).

The examples discussed in this section (see Extracts 6.11–6.16) illustrate how the participants were required to use new technologies to produce and create products and artefacts. These activities were arguably more challenging and educationally useful than the school-authorized activities discussed in the previous section. Contrary to claims about a wholesale digital disconnect between students and their luddite teachers and schools, the evidence presented here shows efforts to engage students with new technologies in ways that go beyond internet research and 'typing stuff up'. Participants described some activities as fun—students were required to create products rather than just consume information—especially when the activities resonated with their own interests and passions. But the more enjoyable activities were not without their tensions. While some seemed partially engaging, participants like Tania, Bella and Ben recognised their limited value outside the classroom; such tasks seemed to be constructed as useful within the bounds of a school subject.

Yet there is evidence of potential—where useful connections are made between this classwork and participants' lives beyond school. In these moments, the students were able to remix and rearticulate school-authorized work as a way of negotiating between apathy and their acceptance that 'schools are schools'. In the remainder of the chapter, I examine more directly the young people's perceptions about the challenges associated with the use of new technologies in schools (see 6.3 and 6.4). I analyse examples which elaborate the sense in which, despite their frustrations, the young people in the study did not disconnect from school-authorized uses of new technologies but rather negotiated them.

6.3 Participants' frustrations with new technologies in schools

In this section, I examine the participants' experiences of school-authorized practices by drawing attention to how their use of new technologies was 'either stimulated or curtailed' (Selwyn 2006: 9) by and within school environments, that is, how the participants negotiated challenges and frustrations related to their use of new technologies in school. The challenges and frustrations identified are organized into two groups. First, I discuss student perceptions about the quantity and quality of school hardware and software—for example, the speed and usefulness of the school's internet—and second, I discuss the students' frustrations with school-authorized uses of new technology designed to curtail and restrict some types of use. The two groups are: (1) technology resources and (2) technology use.

Frustrations with school hardware and software

In interviews and informal conversations, the participants often spoke about the quantity and quality of their schools' digital technology resources. These were almost always criticisms about aspects of the school's resources students deemed deficient. Below, five examples illustrate different aspects of the perceived and the real deficiencies (see Extracts 6.17–6.21). In the first, Lucy and Ben note the paucity of digital camera and video devices at Highview:

1. Lucy I think there should be more digital cameras
2. Ben Yeah
3. Lucy There is only one or two, and like one of them is used only by the Y12s, so especially for media and stuff (that's my view)
4. SB Are you talking about digital video cameras? Or just still cameras?
5. Lucy Oh, um, both

Extract 6.17 (Highview)

Here the number of devices is the issue and leads to access difficulties. The digital cameras must be shared across different year levels and classes, not only on the basis of need but also according to a hierarchy of age, with senior students having more access than lower year levels. Comments about the number of devices were very

common across the schools. In addition, complaints about slow computers, networks and internet were also very common. Below is an example:

1. SB I'm interested in your experience of technology at this school. Maybe we can just start with your opinion of the computers in the school?
2. Jess I can't stand them. Like it's good that they change the background all the time, but it takes so long
3. SB Do you mean the desktop pictures?
4. Jess Yeah, they change it every day for like photos of people around the school
5. SB Okay, students and people around the school?
6. Jess Yep. And yeah that's good, but they take so long to load, the computers. And they are so confusing because they've got so many leads off everything

Extract 6.18 (Middleton)

Jess 'can't stand' the computers because they 'take so long to load' (lines 2 and 6). She likes the way the screen savers on school computers display pictures of students and staff, but her overriding sense is one of frustration at the speed of the computers compared to her machine at home (see 5.5). A similar example from Highview suggests that even when there are sufficient computers, the condition of machines is an even more significant factor for discouraging student engagement:

1. SB What other kinds of problems does the school have with technology? What about the number of computers? Is there enough? Not enough?
2. Ben There's quite a few
3. Lucy If they all worked properly. They could do the ones up in the VCE centre. They were going to do those first, but they still haven't done them
4. Ben Yeah, they're the same as these ((*gesturing to computers in the room*))
5. Lucy Yeah
5. SB So why do you think that is?
7. Susie Well they have done up all the main () things ()
8. Tim And they're probably trying to save or something
9. Ben They've been saying that they've spent 20 grand on () but it just never works though
10. Susie That is still a lot

Extract 6.19 (Highview)

While Susie is positive about the school's attempt to 'do up the main things', Ben's rather blunt assessment suggests that in his eyes these efforts have not amounted to much improvement for students. Pacey's account of the culture of technology (Pacey

1983) (see 3.1 and fig 3.1) suggests that efforts directed at technical fixes (such as resourcing and maintenance) ignore the ideological (organisational and cultural) nature of technology-practice. The final two examples in this section (see Extracts 6.20 and 6.21) suggest that organisational and cultural dimensions are more clearly evident as challenges when resources are less of a concern. First at Basso:

1. SB What about technology at school?
 2. Rob Basically what you see in this room is pretty much what we use, they're always updating the computers
 3. Sarah I think it would be much more simple if we had laptops
 4. Kylie It would be better if we had more rooms=
 5. Sarah =We should have laptops=
 6. David =I don't think the teachers could control the class if we all had laptops
 7. Sarah Yeah I know but
 8. SB Why do you think that laptops would be good?
 9. Sarah Well just because there are always times when we really want to work on the computer and it's like we can't go down to the computers and they're all booked
 10. David I never ask
- Extract 6.20 (Basso)

At Basso, while computers were upgraded regularly, students had trouble accessing labs due to timetable constraints; the labs were regularly overbooked. David's futility is based on knowing the perennial difficulties involved in getting access. At Highview, students had similar experiences. Frustrations with school hardware and software extended to the deployment of technologies across the school and how these were organised and made available:

1. SB You have problems with the internet here?
2. Ben Yeah well they upgrade the S block and that's it
3. Susie Oh and the library
4. Lucy Oh and A10
5. Ben Yeah A10
6. Lucy It's just the internet all round
7. Ben Yeah, but there is all these little rooms that don't (1.0) these computers are maybe 6 or 7 years old and probably riddled with viruses and what not and they just don't work
8. Tim They take ages to load up, and these seem to be the only ones you can get to, computer rooms, as the other ones usually have a class

9. SB So what would you suggest (.) the school do?
10. Ben They need to get better computers, in A9, A10, library, ones that work
11. Lucy We need a better networking system
12. Ben Yeah

Extract 6.21 (Highview)

Ben, Susie and Lucy detail the established order computers are updated across the school (lines 2–5). The computer labs in the ‘science’ and ‘arts’ areas, and in the library, are the best stocked and up-to-date. The science computer labs, used for IT, maths and science, are also used for specialist computer programming classes. The arts area houses the media and visual arts departments where computers are used for imaging, film and sound production. The library has 15 computers for general use and ‘research’ (see 6.2). Small computer pods (half-classrooms containing approximately 15 computers) are scattered around the rest of the school servicing other faculties (lines 7–8). A sliding technology hierarchy exists amongst these rooms—a kind of three-tier system with ‘S-block’ on top, ‘A-block’ and the library on lower tiers and the computer pods at the bottom. New machines are put in the science areas, while older hardware is moved around the school according to the hierarchy: English and languages are at the bottom. Ben describes the pods (the interview takes place in a pod) as ‘all these little rooms’ that contain ‘computers [that] are maybe 6 or 7 years old and probably riddled with viruses and what not and they just don’t work’ (line 7).

These students were clearly frustrated with school policies which favour some subjects and students over others, based on assumptions about the technological emphasis of the subject: students not taking science or maths-intensive courses have much less chance of getting into well functioning computer labs. Significantly, in the examples above (see Extracts 6.17–6.21), students suggest technical fixes—better computers, a better networking system, laptops for all the students or more computer labs. Measures such as these seem sensible enough but, by themselves, cannot solve the problems the students identify (cf Pacey 1983) (see also 3.1).

Frustrations with school-authorized practices

In addition to challenges related to resourcing and access, students across the study schools expressed frustrations with school-authorized technology practices and how use was regulated and curtailed. The participants also identified a lack of knowledge

and skill on the part of some teachers about how new technologies might be more productively used in classrooms.

Curtailing student internet use with blocks and firewalls

The following four examples (see Extracts 6.22–6.25) illustrate student frustration at attempts by the schools to curtail and restrict their use of new technologies—mainly computers and the internet. At Basso, students note how internet filters and blocks are used by the school to restrict access to online games:

1. Sarah They've blocked hundreds of games on, you know, you can't search for games on Google, you can't, and all the games that everybody used to play like two years ago like Bubble Trouble, they've completely blocked, every single=
2. David =They've blocked the URLs from games, cause they keep a history of what everybody has been to=
3. Rob =The more popular the game the quite quicker they are going to block it
4. SB Yeah, what about flash games and stuff, do they block those?
5. Sarah No, arh
6. Rob Umm, they've tried too
7. David In the primary labs they actually blocked most computers with flash, you can't, yeah
8. Sarah None of the computers in the primary school have flash
9. Sarah Yeah
10. Rob They just block sites, they go crazy

Extract 6.22 (Basso)

Sarah, David and Rob outline their problems with internet blocks: not being able to search for or play games and having popular games blocked. The situation at Highview and Bankston is similar. Below, Highview students express frustration with what they see as IT staff being unreasonably restrictive in blocking websites, some of which they argue are useful for schoolwork:

1. SB Yep, okay, well I want to get on to talking about this school then and the way technology is used here in school, the problems or the issues, generally, how teachers use technology
2. Danny Mr Barclay's a tight arse
3. SB Okay
4. Bella He won't let us go on MySpace

5. Danny He blocks almost every bloody site known to man, and say, if you want to do a research on like, because in Health you do sex education and stuff, half the bloody sites are blocked
 6. Bella Google Images, it's not like we are going to look up disgusting stuff
 7. Leah They can track what everyone has been doing in their account, so if that person has been looking up unnecessary photos then they can get kicked off the server or whatever it is, off the network [but they shouldn't]
 8. Bella It's just so much easier with Google images, rather than going to]
 9. Leah Yeah, if you need pictures. Everyone else can't look up for assignments and everything because some other silly people have made the mistake of looking up unnecessary pictures so now we can't do our projects
 10. Bella So you have to get pictures at home, save them on a floppy and you have to bring it to school
 11. SB So it creates a bit of a hassle, transferring stuff and whatever?
 12. Girls Yeah
- Extract 6.23 (Highview)

Danny and Bella argue that the internet blocks make it difficult for students to do legitimate class work (ie 'research' using Google). Leah notes that, despite the school being able to track individual student internet use, sites such as Google Images are blocked for all students. These students choose instead to find images online at home to bring them to school. They take exception to being thought of as the kind of students who would use the school's internet to download inappropriate images. They also resent the fact that the actions of a few mean they are all restricted from accessing potentially useful websites. At Bankston, Tania, Jim and Mary echo these frustrations:

1. Tania I am getting so frustrated with Google Images cause I'm doing Art like, and doing Multimedia and next year doing Year 12 Art, like I'm just needing it all the time, and just without it I'm just, you know, every night I have to go home just to get images just so I can bring them back to school which means I pretty much wasted how ever much time at school cause I have to try and catch up at home finding all the stuff I need
2. Jim Because the computer, ah the school blocks all Google Images because the kids look up um [porn
3. Girls PORN!]
4. SB Yeah
5. Jim And other stuff too, which//
6. Mary Yeah but they should be blocking like things like that not just entirely
7. Tania Yeah
8. Jim The problem is it's hard to define what's not and what is because um they can only put in stuff on the page and if there's no words on the page then you can't block pictures because it only blocks words

Extract 6.24 (Bankston)

Again, internet blocks restrict the work the students are able to do at school and raise questions about those who do not have the luxury of being able to 'catch up at home'. Tania's frustration is exacerbated by her feeling that time on computers is wasted at school. Later in the interview, Mary recalls an incident which illustrates how school internet blocks restrict students from inappropriate sites but also from useful ones:

1. SB So yeah, so you kind of get frustrated with the stuff that's here and you can't do what you need to do?
2. Mary Yeah, it's really limited
3. Jim Oh, we've got a fair bit of technology at school, more than others
4. Mary No, I didn't mean like that, I mean like what you can access
5. Jim Oh, like Google
6. SB What you can actually do with it?
7. Mary Yeah, it's like I was looking up this book review and it just blocked it because it had the word 'gay' in it
8. SB Game?
9. Mary Gay
10. SB Oh, gay, really?
11. Tania No we can't look up 'game' either
12. Jim Yeah, they block games
13. Mary It only had like GAY in it and it just blocked it!

Extract 6.25 (Bankston)

Mary claims that what students can do online while at school is 'really limited' (line 2). However, rather than being incensed by these challenges and obstacles, the students appeared agitated and annoyed but also ambivalent, especially with regard to what they might do about such circumstances. Despite the frustration evident in many of the above examples, and the way some students chose (or were obliged) to complete work at home, there was little evidence of widespread disengagement with school uses of new technology. Indeed, the students were engaged in getting around such challenges and 'making do' (de Certeau 1984) in the environments they found at school (see 2.4 and chapter seven).

Frustrations with teacher use

Students across the study schools expressed frustration with some teachers' lack of knowledge about how to use new technologies effectively in classrooms. Two examples

are provided below (see Extracts 6.26 and 6.27). In the first, Mary, Jim and Tania explain how interactive whiteboards are used at Bankston:

1. SB And so what about in English class? Do you use technologies in English classes?
2. Mary Oh, not always
3. Jim Um, you've got the multimedia boards
4. SB Like interactive whiteboards?
5. Tania None of the teachers really know how to use the interactive, so mainly they just use it to (display)
6. Mary Oh, Mr Mac does
7. Tania Oh, we used it once
8. Jim They run classes for it, ah, they're still trying to get a lot of the teachers up to speed on it
9. SB So you can have the stuff but the teachers don't know how to use it?
10. Jim And the other thing is that I think a lot of the teachers don't understand how it can be an advantage in teaching class. I think it's lost on a few of them. I have seen () they use it all the time and stuff and have been shown how to use it and they are usually really good with it

Extract 6.26 (Bankston)

Tania claims that interactive whiteboards are mainly used as overhead projectors, ignoring the 'interactive' features promoted in advertising materials (cf Moss et al 2007). The students understand that while the school is quite well resourced, the teachers' ability to use new technologies in pedagogically useful ways represents another challenge altogether. The situation was similar at Highview where a new computerised roll-marking system was being trialled:

1. Danny They're bringing new technology here, that SMS um away thing. If you're away//
2. Mandi Yeah, the away system
3. Leah Or late or whatever
4. SB They SMS your parents or something?
5. Danny Yeah, they SMS your parents
6. Leah But that's, mmm
7. Mandi I reckon it should come in more to like teaching. Like you can get these things called Smartboards and a lot of other schools have them and teachers can just write on them and then press a button and it downloads it onto the//
8. Jen And saves it for later

9. Mandi Yeah and save all the notes. So if you miss any lessons, then you can just go back and look at all the notes that the teacher has made. We should get that
10. Leah And not miss so much
11. Mandi And even if we did get them, then teachers need to know how to use them, because quite often with computers they just go, 'I don't know how to do it. You guys have to' but yeah, they need to actually learn how to use them
12. SB So it's more than having this stuff, it's having teachers who know how to use it properly and well for teaching?
13. Mandi Yeah, like using them to their full potential

Extract 6.27 (Highview)

Two different ways of thinking about new technology use are evident here: one with a focus on administration and reporting, the other with a focus on teaching and learning. Danny mentions the 'SMS away thing' used to notify parents about absent children. For him such programs are evidence that 'they're bringing new technology here' into the school (line 1). Mandi has a different view, arguing that new technologies 'should come in more to like teaching' (line 7). While these views are not mutually exclusive, the students' comments suggest that their school experience of new technologies was limited to administrative uses or at least to the rather uninspiring activities detailed earlier in the chapter (see 6.2).

The examples in this section (6.3) (see Extracts 6.17–6.27) indicate two areas of student frustration with school-authorized use of new technologies: one regarding the quantity and quality of resources, the other focused on broader organisational and pedagogical issues. The first group of frustrations points to the complex connections between issues of device/machine numbers, the condition of resources, their deployment across schools and the regulation of student access. In particular, it is clear that a focus on the number and quality of resources masked other inequities. The second group of frustrations show how some school activities and policies with regard to the use of new technologies curtailed and restricted not only the participants' unsanctioned online activities but also their schoolwork. This meant that many of the students preferred to do schoolwork requiring the use of computers or the internet at home; fine for those students set up to do work at home but problematic for those who were not. Despite frustrations, most of the students shared ambivalent but pragmatic attitudes manifested in a sense of resignation, possibly reflecting a lack of confidence in their ability to effect meaningful change. In the final section of the chapter (see 6.4), I explore the variety of student responses to these frustrations and challenges.

6.4 Student responses to school-authorised technology practices

Students responded to the frustrations discussed above (see 6.2 and 6.3) both critically and creatively. In this section, I present instances which demonstrate some of this variety.

Boredom and misuse

Examples across the data suggest that boredom with school-authorised technology practices—and with school practices in general—lead quite often to misuse and vandalism of computers and other devices. This first example is from Highview:

1. SB So not much is happening in classes with technology, that's what you're telling me?
 2. Danny Yeah not really, it's quite a shame because computers are like//
 3. Bella In programming classes they do//
 4. Danny Yeah, but computers are like today's pen and paper virtually, everything is run by computers and everyone=
 5. Leah =If you do an assignment you won't hand write it, you'll just type it up on the computer
 6. Danny Even designers use computers now not pens and pencils
 7. SB So what's the problem with schools?
 8. Danny Maybe money and funding, cause they don't have enough money to upgrade computers all the time
 9. SB Is it other things too? If they had money would there be other obstacles? What else might get in the way?
 10. Danny Misuse of them maybe
 11. SB What would you classify as misuse?
 12. Danny Vandalism
 13. SB Can you give us an example?
 14. Danny Stealing mouses
 15. Bella People steal mouse balls, now they *((the computer technicians))* glue the bottoms up
 16. SB They glue the bottoms up?
 17. Bella Yeah
 18. Danny (1.0) I don't know
 19. Bella Pulling stuff off like that *((pointing to a keyboard missing several keys))*
 20. SB So why do people do that do you think?
 21. Bella Bored
 22. Leah Boredom (2.0) pretty much
- Extract 6.28 (Highview)

Danny recognises the importance of new technologies in the world outside school or at least knows the claims about their importance when he refers to a shift from completing assignments with 'pen and paper' to 'us[ing] computers now, not pens and pencils' (line 4–6). The boredom the students express stems from frustrations with the unimaginative, schooled work they are asked to do with new technologies and the disconnect between how technologies are used and how they might be used. This boredom and apathy, in concert with the shabby technology resources ('so old', 'slow' and 'useless'), results in a situation where students feel little responsibility for existing resources and instead misuse and vandalise them. As young people in the study often said, the 'care factor is zero'. Danny assumes that if the school were better resourced with the latest technologies (ie a focus on numbers and better machine condition) there would be fewer problems because students would be more engaged and teachers more willing to use new technologies in engaging ways (see 3.1). Danny's approach would probably have seemed counterintuitive to the school's IT staff who noted that giving students the latest technologies was a liability.

'Doing real work' at home

Some participants felt that using computers in school, rather than being productive was an exercise in time wasting. Ben argues that he avoids wasting class time by saving his schoolwork for home:

1. Ben Computers at school, using computers at school is a waste of time
2. Susie It takes you an hour to log in
3. Ben Yeah, yep, and then people buggarise around on the internet and stuff, it's just not worth the time, better doing schoolwork after school on the computer at home
4. SB On your own stuff?
5. Ben Yeah, solid learning during class
6. SB That's very interesting
7. Ben It's just that teachers can't have control of every single person on the computer, like you might be playing games, you're not doing the right thing, well when people are just sitting down (.) you're either doing one or the other

Extract 6.29 (Highview)

Ben has strong views about the kinds of learning that are appropriate in school: 'solid learning' concerns important, weighty matters, while 'buggarising around' on computers is frivolous and insubstantial. Ben's critique of new technology use at Highview is revealing in several ways. His comments point to the problems with the unimaginative, operational nature of many school-authorized activities with new technologies, and his critique points out that not all students are enamoured and engaged by new technologies. Indeed, some students see new technologies as distractions from the 'main game' of 'solid learning', an attitude found in studies of parents (cf Facer, Furlong, Furlong and Sutherland 2003; Holloway and Valentine 2003) but also of students (cf Facer and Furlong 2001; Selwyn 2006). While Ben is a computer enthusiast, building and upgrading his own machines, his annoyance at how computers are used at school suggests that he sees such activities not as opportunities but as poor imitations when compared with his own experience out-of-school (see 5.5).

This is not to say that students who consider computer use in school a waste of time have rich computer experience outside of school, but this example does suggest that computers are not always seen (and, perhaps, rarely seen) by young people as the revolutionary and transformative technology they are claimed to be by promoters, enthusiasts and teachers. Within the study schools, at least, and for many of these students, new technologies are no longer associated with a major WOW factor. On the contrary, for students like Ben and others, they are major sources of frustration. This response was observed across the study schools (cf 6.3).

Defiance

In a response similar to that described above, there were times when frustrations meant that students became defiant and challenged school policies and practices used to regulate new technology use. Highview students displayed such responses when discussing the school's internet quota system:

1. Danny And now we've got an internet balance
2. Leah Yeah
3. Bella They only allow you to use internet sites now, and everyone uses my account, so I have no printing money and no internet balance
4. Leah Yeah, if you have no internet balance and no printing money then you can't do any work
5. SB And so do you have to pay for extra?

6. Leah Yeah, you get given about ten or fifteen dollars maybe at the start of the year
9. Danny You get five dollars internet balance, and you get ten dollars printing
10. Leah Then if you use it all up you have to pay it out of your own pocket, but most people just say, 'Can I use your account instead?' You can't do the work because you can't use the computers anymore
11. Bella I think it's when you want to put printing money, Mr Barclay's always like, 'Come back another time!'
12. Leah Yeah, you can't go during class, if you're in the library and you've got a class on, you can't//
13. Danny Yeah, he tells you to go away and to go see him at lunch
14. Leah Yeah, when you need the work now
15. Danny Where you should be able to go at any time
16. Bella And it doesn't seem like he's doing anything anyway
17. Danny He sits and listens to the radio and stuff
18. SB So how does that make you feel about using the computers at school?
19. Danny It's just crap
20. Leah I'll just use it until I run out of money and then I just won't do my work, I will just wait until I do it at home, I don't want to pay

Extract 6.30 (Highview)

The use of an internet quota system frustrates these students considerably, but they find ways around these problems, most notably by sharing internet accounts. Account sharing was observed across all study schools. However, this method is short-term, as the more people sharing an account the faster internet and printing credits are used up. Despite this creative, subversive response, Danny eloquently sums up his feeling about the use of computers at school and this particular challenge, 'It's just crap' (line 19). With such frustration noted, Leah provides an example of youthful defiance but arrives at the same position as students like Ben, choosing to forgo computer use at school for the better resources she has at home. The combination of a creative, subversive response, with a defiance towards school practices, makes for an apathy tinged with ambivalence. It embodies an effort at non-compliance but with a recognition of the need to still do schoolwork and engage with school practices at some level.

Potentially productive engagement

Not all the responses to new technology use in the study schools dwelt on the problems the students experienced or perceived. Instead of emphasising the disconnection students felt towards the use of technologies in schools, the final four examples in this

chapter (see Extracts 6.31–6.34) show students using new technologies in ways that open up the possibility of useful connections between students' own experiences and school-authorized uses. These examples also suggest that the experience of technology use at and across the schools was uneven and related not only to factors such as the quality and quantity of school resources and how these are used and deployed, but also to how the students choose to respond to the challenges and obstacles they face. In the first, Tim, from Playford, discusses student use of Hotmail, which was blocked in most schools in the study:

1. Tim I think the main reason that they don't block Hotmail is that you can send work to yourself
 2. SB Yeah?
 3. Tim So, like, I got this from here. One of the blokes in my RE (*religious education*) class sent me an assignment that we're doing together from the school, so, and you can do it with MSN as well when you're at home, you can send files between students and stuff like that, so he sent me a PowerPoint presentation, it's for RE
 4. SB It's something you're doing for school?
 5. Tim Yeah
 6. SB Do you work like that quite a bit between students?
 7. Tim Yeah, if you're working in groups then it's probably a very good idea so
- Extract 6.31 (Playford)

When collaborating on assignments, Tim and his friends use Hotmail to send work to each other. At home they also use MSN messenger to share schoolwork. By doing this they extend the possible uses of a sanctioned technology (in this case Hotmail) to collaborate on school-authorized tasks. In the next two examples (see Extracts 6.32 and 6.33), students from Bankston, in separate interviews, discuss how they have been able to use mobile phones to aid their schoolwork. First, Jim recalls using his camera phone to take pictures while on a Geography field trip:

1. Jim I thought of something else, we can use our phones for like homework and stuff, we use the camera phone if we're out on a Geography field trip
 2. Mary For doing reports, taking pictures and then you put it up on your screen
 3. Jim I went on a field trip for Geography and I took my phone and took a picture of all the places we went to and then I put that in my project
 4. SB Great
 5. Tania It's like having a camera with you all the time, like
- Extract 6.32 (Bankston)

Jim is able to use his camera phone, a proscribed device within the school, to help him complete schoolwork. He uses an unsanctioned device for an authorised purpose and in doing so makes a connection between his everyday life and identity outside of school and the requirements of his school life and identity as a student. The next example is similar:

1. Jim LCD phones are pretty cool too so, you can do a lot with them
2. Mary Yeah
3. Jim Like they have audio recorders too, so a couple of times I've recorded teachers talking in class so
4. Tania Yeah, but I started that, I was doing that before you were *((laughing))*
5. SB Like when they were going off about something or?
6. Mary Well if they were talking too fast for me to write
7. Jim Or like can't be bothered taking notes

Extract 6.33 (Bankston)

Mary and Jim give two reasons for recording their teachers. For Mary, it is a case of the teacher 'talking too fast for me to write' (line 6) and for Jim, a simple matter of 'can't be bothered taking notes' (line 7). A technology banned in school is used to assist students with their schoolwork. The last example also shows students using unsanctioned technologies within the school, but for purposes which might be tweaked to support learning. When connecting to an online chat program during schooltime, David notices that a friend from another school is also online and using the program:

1. David Hey Chad's on *((noticing that a friend is currently logged in to MSN))* Why is he on?
2. Sarah There is actually someone called Chad?
3. David Yeah, I'll see if he's at school
4. SB Is he? What school is he at?
5. Rob He probably is at school *((laughing))*
6. Sarah Yeah, so we talk to people who are at school doing the same thing as you

Extract 6.34 (Basso)

David uses an unsanctioned technology within the school to engage in an activity which has educative potential, certainly as a way of students communicating in real time and collaborating outside the school. In each of these examples (see Extracts 6.31–6.34), students step outside school-authorized uses of new technologies. While some are not strictly unsanctioned—in the case of Tim using email to swap schoolwork—they are

clearly not teacher or school directed. Where Jim takes phone photos for a school project or where Mary and Tania record the teacher in class to capture important instructions, there is a sense that students are not doing anything for which they would be severely punished. Each instance arises in response to a particular need and embodies a type of everyday creativity not expressly called for by the requirements of a schooled activity (cf de Certeau 1984; Pope 2005) (see also 2.3 and 2.4). That is, the activities do not require students to use new technologies in these ways, but participants create opportunities within school tasks for the use of new technologies in productive ways. Of course, as I have noted throughout this chapter, such negotiations are not always successful. The young people in the study often experienced frustration and disappointment. Yet despite these obstacles many remained philosophical about the challenges. Rob sums up this attitude: 'We encounter these small disappointments everyday'.

6.5 Negotiating frustration, apathy and ambivalence

This chapter has described how new technologies were used in the study schools as part of school-authorized technology practices. Two broad practices were identified across the dataset: information gathering and repackaging activities, and activities requiring the creation of products and artefacts. The analysis suggests that the participants were often critical of these practices, finding the first functional and unimaginative and the second 'fun' but inauthentic and 'pointless'. Many of the participants understood that these school tasks made sense only within classrooms and that their relevance was not always clear outside school contexts. The analysis also suggests that participants were frustrated and challenged by the way their use of new technologies was regulated and curtailed by school policies and practices. These frustrations stemmed largely from perceptions of unfairness in the schools' attempts to regulate and control school-authorized *and* unauthorized uses of new technologies.

But while the participants were clearly frustrated by the majority of school engagements with new technologies, they reacted in a variety of ways: boredom and misuse of technologies, choosing to do work at home, defiance towards school practices and policies and also potentially productive engagement with school ways of operating. Ultimately, they appeared both ambivalent and apathetic about the work they were required to do as part of school-authorized technology practices and the challenges associated with these practices. As the examples in this chapter illustrate, the

participants were not completely disconnected from school because of frustrations and mismatches in their engagement with new technologies compared to school-authorised use, nor were they seduced by new technologies when these were employed as classroom engagement tools. Instead, as I have argued, the situation was more complex and variable. Many of the examples above challenge the idea that school-authorised technology practices, *and* unsanctioned practices, are either boring or engaging. Rather, both these elements are present, simultaneously. Activities which students find 'fun' and which have creative potential are also described as 'pointless'; internet restrictions, blocks and bans, seen as a normal part of school life and more or less accepted by students, are also the targets of student subversion.

The next chapter further develops this line of inquiry by more closely examining unsanctioned or unauthorised digital literacy practices within schools.

7

Underlife and tactics as digital literacies

7.1 Digital literacy underlife

In this chapter, I examine the unofficial and unsanctioned literacies of participants, especially as they relate to their use of digital technologies. These unofficial and unsanctioned literacies form part of what might be called young people's *digital literacy underlife*: individual and collective behaviours, attitudes and practices characterised as sub rosa (Gilmore 1986), hidden (Finders 1997), clandestine (Stirponi 2007) and borderland (Gee 1996; Wilson 2000). Research examining literacy underlife in various settings, much of which focuses on adolescents' talk and writing in and out-of-schools (Camitta 1993; Diamondstone 1998; Gregory and Williams 2000b; Kramer-Dahl 2005; Luttrell and Parker 2001; Maybin 2007; Shuman 1986) was discussed in chapter two (see 2.3 and 2.4). The analysis here builds on this work but shifts the focus to participants' use of new media technologies in schools and classrooms.

Through an analysis of the data I illustrate three *practices of negotiation* employed by the participants to 'make do' and 'smooth out the terrain' of school-authorised technology use (cf de Certeau 1984). These practices are part of the participants' digital literacy underlife, through which they mixed school and out-of-school practices and negotiated alternative spaces, identities and relationships within school environments. The analysis suggests that these practices enabled them to retain a sense of themselves as people other than students or as more than students. In particular, my analysis

draws on Erving Goffman's (1962) notion of underlife and Michel de Certeau's (1984) work on the uses and tactics of consumers as key theoretical frames (see 2.4).

The analytical and interpretive work in this chapter should also be read as a response to research discussed in chapter three (especially section 3.4), where I identified studies which have focused on young people's experience of digital culture, new texts and new literacies in out-of-school contexts, and considered their implications for formal education environments. This is a popular story in literacy research and highlights the challenges schools face in 'doing technology' and in taking serious account of young people's increasingly digital lives outside of schools (cf Rampton 2006; Sefton-Green 2006). By contrast, this chapter seeks to tell an untold story or, at least, a lesser-told story about young people's unauthorised or unsanctioned digital literacies in schools. In this story, I develop a notion of digital literacy which is very different to the operational or skills-based approaches discussed in chapter three (cf Leu et al 2004) (see also 3.4). In a similar way to basic grammar skills, 'operational' computing skills (cf Lankshear and Snyder 2000) are useful but, as the examples in this chapter illustrate, conceptualising digital literacies as a set of digital skills ignores the way in which literacies are social, technical and organisational practices (cf Pacey 1983), through which participants engage in all kinds of work ranging from the productive and creative to the mundane and banal. Digital literacy underlife practices were important elements of the participants' experience of school.

Practices of negotiation

With the salient conceptual and methodological frames outlined in chapter two and three, I move on to describe my analysis of three broad underlife practices, or 'tactics', used by the young people in the study. These underlife tactics were employed to negotiate spaces within schools for unsanctioned or unofficial practices. They were:

- importing and insinuating
- workarounds
- subversion.

Students used unsanctioned technologies, software and literacies *in school*. That is, they *imported* and *insinuated* into school proscribed and restricted technologies, software and practices. These imported practices and technologies represented challenges to

school literacies by unsanctioned technologies and practices. The students also devised *tactical workarounds* when confronted with school practices, hardware, software, rules, blocks and obstacles which restricted their engagement in unsanctioned practices, or which made it difficult to use technology in ways restricted by the school. These workarounds used knowledge and practices 'borrowed' from across different domains and from different sites, (re)introducing techniques from other times and other places into the school. In addition, the young people deliberately *subverted* school practices *with* sanctioned technologies. That is, they used technologies readily available in schools to engage in tactics and underlife behaviours which challenged traditional school literacies. In effect, these young people inverted school-authorized technologies and practices and used them against school ways of doing things. Sometimes this was to deliberately challenge schooled policies and practices, but also to overcome boredom. These three underlife practices highlight issues of negotiation (see 1.4) with regard to the significance of social relationships for the participants and to the making and remaking of individual and group identities through literacy and technology use. As they overlap, they are best seen as interconnected.

7.2 Importing unsanctioned technologies

A tactic insinuates itself into the other's place, fragmentarily, without taking it over in its entirety, without being able to keep it at a distance. (de Certeau 1984: xix)

Participants imported unsanctioned technologies (software and hardware) and also insinuated unauthorised practices into schools. This importing frequently involved the use of popular cultural forms such as computer games and aspects of game culture and mobile devices including phones and MP3 players. The content of young people's talk and interaction was also significant: cultural references to television, film and music, for example, were very common. Students framed these underlife tactics in a variety of ways: as a response to boredom and frustration; as an attempt to inject a little fun, creativity or irreverent disobedience into an otherwise ordinary school day; and sometimes as quasi-guerrilla combat.

Smuggling in games and other software

Importing practices commonly involved smuggling computer games and banned programs (eg LimeWire, BearShare) into school on USB flash drives. Participants across

the study had either done this themselves or reported friends doing it. Programs were then loaded onto computers both in and out of classtime. In addition to USB storage devices, students often used school computers to download proscribed programs directly from the internet. Two instances illustrate how students did this (see Extracts 7.1 and 7.2). In the first, Bankston students discuss a software add-on for the chat program MSN Messenger, called messenger plus! (see www.msgpluslive.net):

1. Jim It's got other stuff, like, if you're using a computer at school or something you can go control-space and it turns the window into a network drive symbol, so teachers can't see
2. Mary Yeah, but you can't even use that at school anyway because it's not installed
3. Jim You can preinstall it onto something and then copy it across. That's how you do it
4. SB On to a USB drive or something?
5. Jim Yep, that's how they get *LimeWire* and stuff at the school and then download things, using the school's fast internet, which isn't really that fast
6. Mary Yeah *((laughs))*
7. SB Faster than some though?
8. Jim Yeah
9. Mary I hate the school's internet

Extract 7.1 (Bankston)

The add-on program enables students to use MSN without looking as if they are using it—by disguising the chat window as an innocuous looking desktop icon when a teacher is in the vicinity. Jim indicates how such things are done: by 'preinstalling' software onto a USB drive and copying it across to either a school computer or to the school's network (lines 1–3). Programs smuggled into school in this way are then used in conjunction with the school's comparatively faster internet to download other things (line 5). In a second instance, a similar tactic is employed at Playford where a group of Years 10 and 11 boys are working in a school computer lab:

((The boys are all flicking between their schoolwork and the game Grand Theft Auto: San Andreas while chatting amongst themselves. The teacher peers in through the window and bangs on glass as he notices the boys playing games again. He shouts something threatening and then turns back to the class in the other room)) (2.0)

1. Alex Tim's busted
2. All *((laughter))*
3. SB Busted. Okay, um

4. Tim Also you can get emulators as well, so the Nintendo 64
5. SB Yeah, so you play Nintendo games on the PC?
6. Tim Yeah, you just bring them in on memory sticks
7. SB Ah, okay
8. Tim Occasionally (.) occasionally (), I don't use it
9. Michael But he's got that on that computer
10. SB *((To Michael))* do you play it off the memory stick?
11. Michael Nah, just install it on the computer
- [...]
12. SB So how do you go about putting the games on? Do you bring them on something?
13. Michael Yeah, on a flash drive, so even we can get stuff by (downloading it)
14. SB Yeah, how would you do that? What programs (would you use) LimeWire or something?
15. Michael Nah, () the P2P ones never work well (here at school) because they block the ports
- Extract 7.2 (Playford)

The computer network setup at Playford meant that P2P software was difficult to use, so the students employed regular internet browsers to do the same job (ie Mozilla Firefox). The boys describe a common practice across the study schools. In informal communication with staff at Middleton, a teacher expressed it this way: 'We don't have a lot of issues with email—more with executable files on the hard drives and stuff' (Personal communication, Feb 2008). Documents gathered from a number of the schools, such as booklists and the like, along with reports from teachers and students, suggest the problem has been created partly by schools requiring students to carry larger digital storage devices. At two of the five schools in the study (Basso and Playford), students were expected to use USB drives for storing schoolwork and in the others many students carried them anyway. USB drives can store large programs and vast libraries of information and images.

In the extract below, students from Basso discuss how they import games and other software as a response to their frustrations when using or trying to access new technologies in school:

1. SB Why do you think that laptops would be good?
2. Sarah Well just because there are always times when we really want to work on the computer and it's like we can't go down to the computers and they're all booked
3. David I never ask
4. Rob I wouldn't be putting my work on my laptop if I had it, the only reason I'd have () you (could) go on msn and start insulting people down the other end of the classroom
5. David Play games ()
6. Rob they control the network and we try and put games on anytime we can
7. Sarah (On the) h-drive
8. SB The h-drive is your personal hard disk space?
9. David Yeah, were we store work, and they go in and they delete anything else you've got on there
10. SB Really?
11. Rob Well they did last time and also banned all sites with the words 'game' in them, so we tried to work our way around that, we made sites called 'the weather' so they couldn't ban it
12. Sarah Yeah, the weather
13. SB *((laughing))* So what else do you do to get around the rules that they have here?
14. Rob Um, well=
15. SB =Well maybe we can start one step back, what kinds of rules do they have here for computer use or for media use?
16. Sarah Can't put games on your h-drive=
17. Rob =Can't play games during class or at lunchtime
18. David So it's work orientated
19. Rob Yeah, we can use it for work

Extract 7.3 (Basso)

In response to their frustrations with internet blocks and restrictions (lines 2–3, 9, 11, 17), the students frame an adversarial relationship with the school, its rules and policies, using 'othering' pronouns such as 'them', 'us' and 'we' and strong verbs such as 'control' and 'ban'. However, rather than represent themselves as victims, they indicate their agency and decision-making abilities (lines 3, 4, 6: 'I never ask', 'I wouldn't be putting my work', 'we try and put games on'). Rob, David and Sarah see themselves as engaged in quasi-guerrilla combat with the school's containment agenda (cf de Certeau 1984; Shuman 1993).

When prompted, they name the school rules as if reading from a list of 'do not's' (lines 16–17) and pointedly identify how these rules direct them into uses which are 'work orientated' (line 18). However, it is also clear that school notions of work are not all that these students are interested in doing. When discussing why laptops might be valuable in the classroom, rather than seeing them as a resource for school learning (eg completing school assignments), Rob claims, 'I wouldn't be putting my work on my laptop if I had it', and suggests instead that 'you (could) go on msn and start insulting people down the other end of the classroom' (line 5). Rob insists that he would engage in other kinds of 'work'. These other kinds of work include playing computer games, chatting over the internet and accessing banned websites. Another aspect of this work involves the importing and smuggling of computer programs into the school and putting authorised technologies to unsanctioned uses (see also 7.4). In opposition to the idea that the school computers and internet should be used for schooled notions of work, Rob and David recontextualise 'work' in ways which better accommodate their own ideas about activities that might legitimately pass for work (cf Dyson 2003; Gilmore 1986). Choosing to use games and other frivolous time wasters constitutes a kind of thumbing the nose at authority—a gesture and tactic of defiance in response to frustration.

While participants imported technologies (further examples below discuss the use of phones and MP3 music players), unauthorised *practices* were also insinuated into schools: for example, attitudes about what counts as work or games and attitudes about game playing. These imported practices were linked to imported technologies and involved ways of using technologies characteristic of other times and places (cf de Certeau 1984). The importing and insinuating of both technologies *and* practices can be seen clearly in the next example. Basso students, Rob and David, play a game hidden on the school network by other students:

1. David Yes, slime soccer! *((noticing the game that Rob has just loaded))*
 2. Rob *((David and Rob, each using the same keyboard, begin to play the game))*
This is a, it's very simple, just two little things and a ball (3.0) so I'm the blue one and David is the green one (5.0) *((to David))* Ah, I could see that coming. So we play this for a while, we have competitions an, anytime we have a substitute teacher in the computer room we use this
 3. David We used to
 4. Rob Ah, that was close
 5. David Hah, nice shot! (2.0)
- [...]

6. Rob So this is a series of games called 'slime games'. This is slime soccer (1.0) they've got slime volleyball, slime cricket, slime bowling, slime boxing
7. David If you search 'slime soccer' on Google=
8. Rob Or just 'slime' actually (2.0) if your search for slime soccer on Google you'll get a site called this (.) game
9. SB Do you know why they call it slime soccer?
10. Rob Uh, I don't know, maybe the characters look a little like slimes=
11. David =The original was actually called slime volleyball
12. Rob Yeah
13. David Which was pretty simple, just//
14. Both A:::h! *((someone scores a goal))*=
15. Rob =Got the *((touch))*
16. David At the one minute mark=
17. Both =A::h! Haw!
18. Rob When you get to three *((goals))* he *((the game character))* gets a smiley face *((laughter))*
19. David Yeah it adds that extra bit of like enjoyment to the game
20. Both O::h!
21. Rob I'm on the attack, I've got to take the risk, I can't do anything else
- Extract 7.4 (Basso)

In addition to playing an 'imported' game, the boys insinuate their gameplay practice into the school environment. They interact around the game, calling it with 'oohs' and 'ahs' as goals are scored and missed (lines 2, 4–5, 14–17, 21). They draw on professional commentating genres from sports television and radio to give an account of their gameplay and to make meaning through it. Rob and David also use the event as an opportunity to present themselves as particular types of people, to build identities as gamers and insiders in game culture (lines 2, 6–8, 11–13, 18). They claim this affiliation by knowing the genealogical development of the game and by having played the 'original' and finding it 'pretty simple' (lines 11–13). In their asides and commentary, they indicate their expertise and position themselves as introducing an adult to an aspect of their digital literacy underlife. Equally important as these elements is the 'fun': David points out that when a player scores three goals, the 'slime' begins to smile which 'adds that extra bit of like enjoyment to the game' (line 19). Such practices are also about finding space for a little light relief and distraction within an everyday school routine.

Phones and other mobile technologies

In addition to the importing of games and unsanctioned software, phones and other mobile devices featured prominently in the young people's discussions. These devices also represented imported technologies and practices. All schools in the study had policies restricting student use of mobile phones, MP3 players and other electronic devices. It was common for these policies to be disregarded by students. In interviews and informal conversations students in all the study schools reported, or were observed by the researcher, carrying or using mobile phones and other proscribed devices. Judging by the frequency of references to phones (more than 300), phone possession and use was prolific. These devices were used within the young people's digital literacy underlife in a variety of ways but generally within contained forms of underlife (Goffman 1962) (see 2.4). In the interview extract below, the mismatch between school policy and student practice is clearly illustrated. Students from Bankston discuss phone use at school and the tensions which have arisen around their prohibition:

1. SB So do you bring them *((mobile phones))* to school most of the time?
2. Liz Yeah
3. Ryan Yeah, leave them in your locker
4. SB Leave them in your locker? So what's the school rule about phones?
5. Ryan They'd prefer that we don't have them at all, but they can't really stop you from bringing them
6. SB Yeah?
7. Ryan They're actually saying that you're not supposed to bring them to school=
8. Margie =Yeah
9. Ryan That's just stupid, like why would you have one of those (rules)?
10. Margie Then they say that you can leave them at the office, but I don't trust that woman
11. All *((laughing))*
12. Liz They say not to bring them to school and then they tell us in form assembly that, you know, girls have been attacked on the way home, you know, walking home from school on their own, you know if they had their phone they could call for help but it's like 'don't bring your phone to school', it's kind of=
13. Ryan =Contradictory=
14. Liz =Yeah
15. SB So what do you think the reasons are that schools often ban phones? What are they worried about?

16. Margie Oh, people play with them in class and prank each other in class
 17. Liz And people steal them too
 18. Ryan Oh yeah
 19. Liz The school doesn't want to be responsible for your phone getting stolen

Extract 7.5 (Bankston)

Margie and Liz attribute Bankston's 'no phone' policy to staff concerns about classroom disturbances and the school's reluctance to take responsibility for lost and stolen phones (lines 16–19). But the practical reality of the policy is more complex. Liz and Ryan point out a contradiction in the school's rhetoric about phones when in a recent school assembly they were told about female students being attacked while walking home from school. As far as Liz and Ryan are concerned, mobile phones make sense if such incidents occur. In this example, students see the school as putting their safety at risk by prohibiting phones because they fear they will be a distraction in class. For these students, minor class disturbances are a small concern when juxtaposed with a safe journey home after school. Liz and Ryan are attuned to such contradictions. Even when the school allows students to have phones before and after school (by leaving phones at the school office during the day), such options are mocked by the students as unworkable. In the end, while the school has a broad policy ('they'd prefer that we don't have them at all'), the students still bring phones to school because the advantages outweigh the potential consequences of breaking a school rule (see also Extracts 7.25 and 7.26).

Phones were used in a variety of ways to play havoc with established systems (de Certeau 1984). Usually this was to get another student into trouble or due to boredom and the desire to have some 'harmless' fun, as the students put it. In the two interview extracts below, students discuss how they used phones to 'prank' other students and to disrupt classes (see Extracts 7.6 and 7.7). In the first, Bankston students discuss how this worked:

1. Mary But it's funny
 2. SB It's funny?
 3. Mary *((laughing))* No, no, it's the immature side of me, don't worry
 4. SB No, no, please
 5. Mary You call people when you're in class and then their phone goes off and they go like this *((mimics student pulling the phone out of pocket))*
 6. Tania Crank calling during class is also very fun and entertaining

7. Mary Yeah, or you send them messages saying 'you're in trouble now!' and the phone goes beep beep beep beep

Extract 7.6 (Bankston)

There is more evident here than having fun. The students describe how they use a texting ruse to get other students to unintentionally reveal their phones in class thereby attracting teacher attention and the possibility of sanctions. This is the art of 'placing one's blows', being careful and tactical, but also in 'putting one over on the established order on its home ground' by creating a class disturbance (de Certeau 1984: 18, 26). Mary and Tania revel in the childish nature of this pranking practice. In contrast, students at Highview describe a similar pranking action but relate to it differently:

1. Danny Sometimes you prank people
 2. Leah I don't do that much anymore
 3. Bella N::o ()
 4. Danny Because you always know if someone doesn't put their phone on silent, so you just get them in trouble and like if you are in a classroom next to then
 5. Bella It's fun when you're with a mate and you're bored
 6. Danny You don't just do it like, 'Yeah, I'm going to prank you'
 7. Bella Yeah *((laughs))*. It's a bit Year 7
 9. All Yeah

Extract 7.7 (Highview)

For Danny and Bella, pranking, as well as having 'fun when you're with a mate and you're bored', serves a social and relational function. There is a cool factor and proper procedure for pranking. As Danny and Bella indicate, the right attitude must accompany the practice for it to be legitimate (lines 6–9). The approach to the action is as important as the action itself and can be invalidated if thought to be inauthentic. In this example, phone pranking another student in class for the sake of it, or doing it because you are 'into the technology' or proud of your new phone, can be seen as childish and unsophisticated. For these young people, it is uncool to be too eager about anything: ambivalence and apathy are more authentic and credible attitudes than excitement and enthusiasm (see 6.5).

Importing and insinuating unsanctioned technologies and practices proved to be a common digital literacy underlife practice across the study schools. While new technologies feature prominently in these examples (see Extracts 7.1–7.7), the analysis

suggests that the focus of young people's underlife practices are the relationships and attitudes underpinning interactions, those which contribute to the negotiation of identities. It is the social and cultural dimensions, rather than the technological, which are the most significant (cf Pacey 1983) (see also 3.1 and fig 3.1). In the next section, I analyse instances of the second group of digital literacy underlife practices: workarounds.

7.3 Workarounds for school-authorized practices

Young people in the study devised tactical workarounds which enabled them to get around and out-manoeuvre established practices and norms, obstacles, rules and blocks that were used to constrain, restrict and 'school' their new technology use. The metaphor of the 'workaround' is borrowed from technical IT discourse and describes a practical, make-do approach to technology maintenance with a low-fi, garage sensibility. As with bush-mechanics, where a length of wire and duct tape can get you back on the road, workarounds are engineered to get a system up and running at minimal cost and fuss. The workarounds used by young people across the study embodied similar attitudes. They used technologies and practices from across domains and from different sites (eg home, work, school) to reroute around problems, frustrations and challenges linked to school-authorized technologies and practices. Two varieties of workaround were employed by the participants. The first involved considerable planning, commitment and technical expertise—the development of a games website, for example. The second set of workarounds were ephemeral as they represented a quick response to a particular situation. They were employed as 'isolated actions, blow by blow' (de Certeau 1984: 37); they were less planned, less organised and were stand-alone actions used as required.

Making the weather

In the first example below, Basso students discuss a games website popular with students at the school. Developed and maintained by one of the participants, the website hosts a large selection of internet games normally blocked by the school's web servers:

1. Sarah Rob, what is that website 'the weather'? (.) What is that website?
2. Rob I don't know if it will work=
3. Sarah =the weather?
4. Rob dot tk
5. Sarah www.theweather.tk ((reads out URL as she types it in))
6. Kylie The weather's got MSN on it
7. Rob This is a site set up by one of my friends
8. SB So MSN is like within the site?
9. David It's like an online MSN thing, so we can () the teachers deleted msn a couple of years ago
10. Sarah It works! ((the website loads))
11. Rob My friend made it and named it 'the weather' so they couldn't block the URL. You can't block the words 'the weather'
12. David They should have called it the Google, they never would have been able to block it
13. SB This fellow is at this school or is he from somewhere else?
14. Rob No he's at the school, and he's a bit of a wiz at tech stuff and so he just made all these games
15. David He's got weather spelled three different ways so in case just
16. Rob Yep lots of backup sites, and this is all the rage
17. SB So you get on here and it's kind of like a hub? The whole school uses the site and they don't know about it?
18. Rob Well I think they may know but they can't block 'the weather'
19. David They can't do anything about it
20. SB Cause if they block the weather they'd be blocking a whole bunch other stuff?
21. Rob Yeah anything with the words 'the' and 'weather' in it
22. Sarah Well maybe they can unblock
23. David I don't have a clue how they block stuff but
24. SB So does he ask for donations to keep this secret underground thing running?
25. Rob He's got ads, if you click on them he gets paid every time you click on them so he just goes in and clicks on them a couple of times
26. David So he makes quite a bit of money?
27. Rob Well no he doesn't make quite a bit, I mean he gets like half a cent every time they click on it. Money's money
28. David He didn't do it for money, he did it just for//
29. Rob I think he has a teacher at home who takes him through it and he does it like for a project or something

Extract 7.8 (Basso)

In this extract, students revel in the fact that one of their own, the website creator, has ‘something over’ the teachers and technical staff. They are proud of their underground knowledge of the website and the agency it gives them in importing their out-of-school interests and practices into the school, thumbing their noses at policies and systems used to restrict and ‘school’ their internet use. The young person who created ‘the weather’ website has sophisticated understandings of how internet sites are blocked and how to use creative language strategies to workaroud these problems (lines 11, 15–16, 18–21). Typical school uses of technology are also well known to the students. For example, David wryly observes that the website creator could have named the website ‘Google’ and been assured that school servers would never have blocked the website, such is the significance of Google use in the school (line 12) (see also 6.2 and Extract 6.3). As a tactical workaroud, the website is in part a response to frustrations one youth felt at school policies that restricted access to popular online games websites. According to the website’s creator, Simon:

The idea behind the website is that schools, universities and workplaces are unable to block the keywords “the” and “weather” unless they collectively block all websites with such words, ie theage.com.au and weatherchannel.com.au would be blocked as well. (Personal communication, February 2008)

While Simon’s motivation stems from personal frustration and a decision to take action to workaroud the school’s internet blocks, use of the website by other students can be seen as a collective act of resistance by members of a loosely defined affinity group (cf Gee 2003) (see 2.3). Rob attempts to establish a connection with the website creator by identifying with Simon’s hacker underlife; this is signalled by the use of collective and inclusive pronouns (eg ‘we’) describing ‘ownership’ of, and connection to, the website:

Rob Well they did last time and also banned all sites with the words “game” in them, so we tried to work our way around that, we made sites called “the weather” so they couldn’t ban it

Extract 7.9 (Basso)

Over the course of the year spent working with these students, theweather.tk was continually refined as its popularity and web traffic from around the world grew. Since the time of data generation it has again been upgraded and now has over 700 games, a feedback facility, a blog and information for users and potential advertisers—even a Facebook fan page. Site information now includes advice on how to access alternative website ‘mirrors’ where the site is replicated (www.examguide.tk and www.theweathertk.com). The site’s new ‘help’ section contains advice for those having

trouble accessing the site from school or work. Users are encouraged to submit games they find online and to provide feedback and commentary on games played. Evidence of organisation, planning and time dedicated to the site, suggest that some tactical workarounds need not be, as de Certeau notes, unplanned or ephemeral (de Certeau 1984). Simon and friends organise a calculated and tactical response to school policies, taking advantage of their out-of-school knowledge and the challenges the school faced in policing a heterogeneous space such as the internet. The students understood the position of the school, caught between rhetoric about online dangers (technology as catastrophe) (see 1.2) and enthusiasm about the educational potential of new technologies (technology as saviour), and they used this to their advantage (lines 17–21).

Knowledge of web authoring and URL blocking, as well as knowledge about the existence of the website, enabled these young people to employ tactical workarounds to negotiate alternative spaces for identity work. As displayed in the interview, these young people negotiated an alternative discursive space, similar to the underground website, where they constructed themselves as part-hackers in opposition to school notions of what is appropriate to be doing with new technologies (cf Gomez, Stone and Hobbel 2004; Walton 2007). The youth who created and maintained the site was a respected figure amongst his peers, someone who had knowledge and expertise in a place where expertise and authority is almost exclusively held by adults. But knowing *about* the website and *using* it also constitute the creation of a space in which identities can be reimaged and reconfigured in ways different from the social roles offered by the school - a way to put some distance between a school-self and other selves (cf Brooke 1987; Goffman 1962). Use of 'the weather' website, as well as the website author's creating and maintaining work, constituted part of the participants' digital literacy underlife: a set of practices which enabled them to frame alternative views of themselves, and a space where they could actively 'negotiate' the kinds of activities that go on in school.

Ephemeral tactics and workarounds

In addition to more organised workarounds, there were many more examples which were less planned. They arose when students took advantage of existing opportunities or where they exploited and enlarged potential opportunities. De Certeau (1984) notes that those who employ tactics must take advantage of 'the chance offerings of the

moment' (p. 37) by seizing possibilities and by using the cracks and holes in existing spaces. These *ephemeral workarounds* relied on the ability of students to keep two steps ahead of school administrators and IT technicians by exploiting informal online and offline networks, often through working collaboratively (see also 7.5). A degree of commonality across school computing platforms and networks (ie PCs, Microsoft OS, Novell networking) meant that the same, or similar, tactics were employed across the study schools. These tactics took advantage of common 'cracks' or 'holes' in the common systems. Examples of these ephemeral tactics are provided below (see Extracts 7.10–7.14).

Using proxies

At Middleton, Jess recounts her experience exploiting one such workaround using proxies or the 'webpage within a website' method:

1. Jess =Um, you can go onto Google and stuff and do a search and like and then you type in something that you know would be on that website, and then you just scroll down *((the search results))* to it and it will just get you straight on *((to the website))*
2. SB Okay
3. Jess Like if I wanted to go onto Bubblegum Club, if I just typed in bubblegum club//
4. SB Straight into the browser//
5. Jess It wouldn't work. But if I went into Google and then it *((the search results))* had 'Bubblegum Club.com/games' then you could go in
6. SB Like a longer address, it wouldn't be blocked at the school here?
7. Jess Yeah

Extract 7.10 (Middleton)

This workaround requires sophisticated knowledge of how URLs function and what to do if they are blocked. Rather than type a blocked URL directly into a browser—in which case the school's servers would detect the outgoing request and block it—a search engine is used to find a webpage within the website which is not blocked. For example, Jess likes the website www.bubblegumclub.com which is blocked. She can access parts of the website if she knows a webpage URL within the website, such as www.bubblegumclub.com/about.html. This workaround is sometimes referred to as 'using a proxy': accessing blocked websites via an unblocked website or proxy. In this case, Jess' Google search acts as a proxy, allowing her to 'browse' the particular website

of interest, looking for a virtual 'backdoor'. Although not fool-proof, it enables Jess to navigate further than usual.

Using alternative and spoof search engines

Two examples, one from Highview and one from Bankston, show students using alternative search engines, a workaround related to the use of proxies. These search engines are often boutique in the sense that they are not widely known and, therefore, are not blocked by schools:

1. SB I know that at some other schools students have talked about what they do to get around the internet blocking and stuff=
2. Danny =Yeah, like we find like other sites
3. Bella Googlecom.com
4. Danny Yeah, googlecom.com and like you can get pictures on that

Extract 7.11 (Highview)

—

1. Jim There are some pretty funny sites around like elgoog, which is Google backwards so everything is backwards
2. Mary And what's the other one you found? The Gangsters?
3. Jim The other one is gazgoogle which gangsterises every page. It comes out like, 'You, was'up my nigga?' or whatever
4. All *((laughing))*

Extract 7.12 (Bankston)

The search engines act as proxies, allowing students to access blocked sites and images. Some of these replicate the Google search engine attempting to spoof and subvert Google in some way. Sometimes this is playful, as in the case of 'elgoog' which reverses all search text, or 'gazgoogle' which 'gangsterises every page' translating search information into street vernacular (see Extract 7.12, lines 1–3). Other alternative searches have more serious ideological opposition to the Google Corporation's size and power (eg www.scroggle.com). Whatever their motivations, such sites provide proxy access to websites otherwise blocked in schools. The students were interested in the fun and distraction such sites offer. Using them also constitutes 'being in the know' and signals the possession of valuable 'underground' knowledge spread via online communities or offline amongst friends.

Serendipitous opportunities and cracks

Not all students in the study used specialised technical knowledge to workaround school-authorized technology practices. Some stumbled upon opportunities and cracks. Students at Playford found that they could bypass the school's web servers by unplugging the network cable and rebooting the computer—this logged the machine onto the wireless network resulting in unrestricted web access. Alex describes the discovery:

1. SB Okay, can you tell me a bit more, how'd you figure out that you could do, that you could get around the network and access the internet?
2. Alex So I was once, I found all this stuff *((motions to the computer screen and the different desktop icons present))* and I was looking around why is it doing that? () and then I did it like over and over again and it was working, you know
3. SB Did you kind of figured it out as you went?
4. Alex Yeah, it's like a normal computer, right, it doesn't have like even private stuff *((access to the student network hard drives))*, it's just got a C drive *((a local hard disk drive))*
5. Tim Yeah, it just becomes a normal computer? It's not connected to all the servers?

Extract 7.13 (Playford)

Because the computer was not run through the network, it was not subject to the school's internet blocks and thus ran on less restrictive settings. Alex struggles to explain what he found, but he and Tim know what it means in a practical sense. They happily exploit the crack in the school's network as a regular activity.

Hacking computer accounts

There were a number of workaround practices employed which were more risky for students than those described above. These entailed hacking teacher and student computer accounts. In the first example, students from Highview claim to have hacked teachers' accounts:

1. Bella People like hack into teachers
2. Danny Yeah, people can hack into teachers, and we got this ()
3. SB Into teachers' accounts and stuff?
4. Danny Yeah, we've got this message thing

5. SB So how do you do that?
6. Danny I don't know
7. Bella Just knowing their passwords
8. Leah I've found out a teacher's password and then told everyone

Extract 7.14 (Highview)

Hacking teachers' computer accounts allows less restrictive internet access. The students give little information about how they do this, other than 'just knowing their passwords' (line 7)—finding passwords out, guessing or obtaining them by some clandestine means. Participants across the study schools also hacked other students' computer accounts. Danny describes this workaround tactic:

If you are out of internet credit or printing credit you can just log in with someone else's account. It's easy to guess people's passwords and we know the user IDs anyway. You can use a friend's, or someone else's that you know. Some people change their passwords and then forget so they use other people's accounts too. They're too lazy to go and see Mr Barclay to get it changed. (Personal communication, December 2007)

This is not necessarily done to play havoc with established systems, but more often to access the computer for school purposes. Danny gives three reasons why students use this tactic: lock-out from the computer systems because internet credit has run out, printing credit problems and forgetting a password.

Within schools, norms about proper behaviour also extend to the use of new technologies. The tactical workarounds described in this section were often responses and challenges to these norms, or schooled uses of technology embodied in school decisions, policies and practices, hardware and software obstacles, blocks and rules, all of which made it more difficult for students to engage in unsanctioned practices. Tactical workarounds represented countermoves made by the young people to undermine school attempts at containment and control of their use of digital technologies. In the next section, I discuss the third group of digital literacy underlife practices, those used to subvert school practices and to challenge school literacies.

7.4 Subverting school literacies

It does not manifest itself through its own products, but rather through its *ways of using* the products imposed by a dominant economic order. (de Certeau 1984: xiii, emphasis in original)

Young people from across the study schools engaged in underlife practices by using new technologies available in their schools to subvert traditional school literacies—that is, participants inverted sanctioned technologies and practices using them against school ways of doing things. Often this was due to boredom (see also 6.4 and Extract 6.28) or to have fun. These subversive underlife practices represented challenges to school literacies through a rearticulation and reframing of school-authorized technologies (cf Dyson 2003; Gilmore 1986) (see 2.3 and 2.4). While subversion might be more readily associated with disruption, this was not necessarily the case—subversion can manifest itself subtly. I use subversive in a way similar to Goffman’s two forms of underlife, disruptive and contained. The examples analysed below mostly embody contained forms (cf Goffman 1962) (see 2.4). Subversion tactics evident in the young people’s practices included: mashups, efforts at frustrating or satirising school practices and the tactical use of school technology resources. As already noted, there are overlaps between the broad practices identified in this chapter (importing, workarounds, subversion); many of the examples presented above (see 7.2 and 7.3) could have been included in this section (7.4) and vice versa.

Mashups

Mashups bring combinations of different technologies, software, practices, intentions and ideologies together into dialogic tension to create a modified form, artefact or practice; the result is a mashing together of two or more cultural resources into a remediated, hybrid form (cf Bolter and Grusin 1999; Hayes 2008; Lankshear and Knobel 2007b; Manovich 2001). This is done for many reasons, including for satire, critique and aesthetic value. School-authorized devices or practices were refashioned to perform an alternative function (Dyson 2003). Two examples below illustrate this tactic (see Extracts 7.15 and 7.16). The first is from a discussion about email use at Basso. The school’s email system had recently been changed and students found unexpected uses for it, not all of which were in keeping with the original intentions of the software designers or the school:

1. SB So do you email teachers?
2. David Yep, we email teachers about work, yeah
3. Rob I've been using my email a lot this year, actually, because I've been missing days
4. SB So you're asking teachers for work, or
5. David We can use the school email
6. Rob They've changed it=
7. Sarah =updated it
8. Rob Since last year they have a different program
9. SB Yeah, I noticed when you guys where in the library you each had an Outlook account
10. Rob Yep, we have an outlook account
11. David You can also access it from home
12. Rob People take advantage of it by sending group emails to everyone
13. Sarah Oh, yeah, like everyone in the whole entire school, says like 'Hi', and then people send one back saying like 'hi what's up'
14. David Yeah, I got like fifteen. Fifteen different ones going hi, hi=
15. Sarah =And they all say HI HI HI HI HI HI HI=
16. David =Hi, Hi,=
17. Sarah =That's not funny
18. Rob =because you can very easily send them to everyone
19. Sarah Yeah, then it's like 'stop this'
20. David Yeah 'stop this'
21. Sarah Then 'make me!' (.) That's realistic.

Extract 7.15 (Basso)

The school had reasons for updating the email software, one of which, according to informal conversations with school staff, was to encourage exchange between students and teachers about schoolwork outside of classtime. According to the three participants, discussion was encouraged, at least for the students absent from school (line 2–3). But more is going on; the technology allows for other uses. The students mention 'people' who 'take advantage of it by sending group emails to everyone' (lines 12–13). On the one hand, they distance themselves from these 'people' and, on the other, they role-play the scenario with humour suggesting they are closer to the action than they say and that it happens frequently, not just in isolated instances. They are caught up in a 'schooled' habitus where learning is rewarded, but also in a 'teenage' habitus where rebelling is rewarded. The values and dispositions of both play a part in the students' literate habitus (cf Bourdieu 1992; Carrington 2005b; Luke 1992) where

literacy practices from school and out-of-school rub up against each other (cf Bulfin and North 2007).

What began as a school decision to change the email software, in the hope that teachers and students would communicate more often about school-related concerns, became an opportunity for students to interact playfully in ways not officially sanctioned by the school but in ways that were characteristic of their outside school practices (cf Flinders 1997). Their practices represent a playful subversion of school purposes: a kind of IM/chat-use of school email (lines 12–16). Literacy practices more often found outside of schools are seen here blending and negotiating for space with more formal school intentions and practices. In the process, the schooled email space, designated for school-like patterns of behaviour and activity, is reconfigured as a ‘permeable’ play space (cf Dyson 1997), a chat room where every student in the school is a potential participant. There is, of course, also the sense that such chat-like communication in this particular space can be a nuisance (lines 16–20). Despite the source of annoyance, the co-existence of varied intentions and practices is negotiated by the students with humour. What emerges is a multi-voiced ‘conversation’ where the playful and the annoyingly unhelpful work alongside the original intentions of the school (cf Bakhtin 1981). In this example, because chat programs are restricted at school, participants ‘bend’ and modify the original intent of the school-authorized email software so it can be used to perform tasks similar to IM programs: they create a tactical hybrid.

A second example of this mashup tactic is the use of games on graphics calculators. This activity was observed or reported in interviews and informal conversations across all schools in the study and occurred in maths, as one might expect, but also in other classes. The games were usually shared between students by downloading them from a calculator. The games are very basic in function and display, similar to those available on early generation mobile phones. In an instance from Bankston, students discuss such games and their uses:

1. Tania I have to say the best invention though in classes to waste class is Ghetto
2. All Yeah, Ghetto
3. Tania Ghetto () on graphics calculators, and we have like a drug dealing game and so it’s like the best game, you just go around shooting people//
4. Liz You make money by dealing drugs//
5. Tania You make money by dealing drugs and robbing people
6. SB So this is a//

7. Tania Calculator game
8. SB You download it onto your calculator?
9. Jim Yeah, via another calculator
10. Tania You get it, like you can ()//
11. May Where did Ash get it from?
12. Ash I got it off my sister and she got it from=
13. Jim =She got it from someone else
14. Liz *((to Ash))* Do you have a Pimp? Does your sister have Pimp? My sister has Pimp and that's where you're a pimp and you make money for like (1.0)
15. All *((laughter))*
16. SB For doing 'pimpy' things?
17. All Yeah *((laughing))*
18. Liz There's like ho'es ()
19. Tania You can get every type of calculator game to waste your time, you can get Bowling, Tetris, Frogger, Mario

Extract 7.16 (Bankston)

These students (and others across the study schools) reappropriate the graphics calculator, a sanctioned technology, for game playing and time wasting—different kinds of 'work'. Humour and irony derive from the fact that devices designed to save time and perform mathematical calculations are instead put to work as time-wasting devices running software about a gritty urban underground. Tania revels in the game's subject matter: 'You make money by dealing drugs and robbing people' (lines 3–5). Again, this comment is ironic, given the sanitised school environment in which the interview and gameplay took place and the nature of the device and the functions it usually performs. This represents a mashup of the device and its usual function with a set of underlife practices which would more commonly be found outside the school: playful subversion and irreverence.

Reframing time wasting

In the above example (see Extract 7.16), Tania also reframes wasting time in class as an achievement rather than as an inappropriate activity (lines 1, 19) (see also Extract 7.23). For some participants, wasting time is something to do when you are too bored to work and cannot be bothered making much effort with classwork. Time-wasting tactics using school-authorized technologies were employed by students in all the schools to subvert class activities and school practices—both activities and practices

that used technologies and those that did not. In the previous example (see Extract 7.16), in an example from the previous chapter (see Extract 6.10) and in the two examples below (see Extracts 7.17 and 7.18), participants show how time-wasting tactics were employed and how they used popular cultural interests through activities such as computer game playing and browsing online. Extract 6.10 highlights a procrastination tactic described by students as ‘typing in random stuff on Google’ (line 4). Sarah and Rob use this tactic when they are stuck, bored or cannot be bothered with classwork. Rather than play computer games and risk getting caught, they opt for this tactic because it makes it appear as if they are still doing their work (see 6.2). Rather than focus on the class task, they browse online searching for friends’ names and looking up images of people with their own first name (‘ego-googling’). Here, time-wasting performs a procrastination function which subverts school ideals about effective use of time.

The next example illustrates how time-wasting practices involved finding space and reframing time within the classroom for popular cultural interests and other ‘random stuff’. Students at Basso discuss a recent find on Wikipedia:

1. David Do you know the show Urkel?
2. SB Sorry?
3. Rob Not the show, the character Urkel
4. David Yeah, the character, Urkel?
5. Rob What was it? Family=
6. David =Family Matters
7. SB Do I know him?
8. David Have you heard of him?
9. SB Yeah, yeah, Steve Urkel?
10. David Yeah. I found him, he’s got a real name
11. SB Has he?
12. David Yeah, it’s Jaleel White
13. SB What is he doing now?
14. David Nothing
15. Rob He’s been stereotyped as that//
16. SB Living off his fame?//
17. Rob And he can’t get work anywhere else
18. SB He was really annoying that character
19. David Yeah, funny as

20. Sarah So we just look up stuff on Google, really
21. David I found him on Wikipedia
22. Rob Find information on Wikipedia
23. David It gives you a photo, it gives you what he's doing now

Extract 7.17 (Basso)

In their classroom talk and in-between their more focused classwork, students find space to perform quick internet searches on 'random' pop-culture. The conversation around a 1990s American sitcom, *Family Matters*, and one of the main characters and his 'real' life, is a chance to display popular culture knowledge to peers and engage in identity work (cf Dyson 2003). My fieldnotes recorded the classroom scene, which took place a few days before the interview:

It all happens rather seamlessly as they flick between internet browser windows and different Wikipedia entries. There seems to be an interest in the sometimes random and surprising results that Google can generate, a sense that anything could turn up in an internet search. (Fieldnotes, March 2006)

These young people, in their browsing and internet searching, seem to be looking for a connection, a random one, between the known and the unknown—an attempt to establish links between the personal and a wider network or community. The next, brief extract again features the word random. It is from the same interview with the same young people and hints at how their activities carry a certain cultural capital and post-modern sensibility:

1. Rob We love finding sites with just random cartoons
2. David Do you want to watch one?
3. SB Yeah, sure
4. David You might not be able to understand much

Extract 7.18 (Basso)

The notion of 'randomness' seems to be a way of imagining or attributing originality, creativity and uniqueness to a practice or artefact. Given the highly stylised and commodified nature of youth culture (cf Kenway and Bullen 2001; Seiter 1995; Osgerby 2004), the participants seem to be seeking something a little different (cf Lankshear and Knobel 2006, 2007a). The desire for something 'random' can also be read as an attempt to subvert regulated and staid school technology practices and literacies.

Subverting technologies and practices in these ways amounts to their retooling in the service of time wasting. But this time wasting is not only about effective use of time in the classroom; it is about students reframing or rearticulating norms and ideals related to respectful and appropriate behaviour and it is about participants claiming space in the classroom for other kinds of activities and identities, some of which are playful and irreverent (see 7.2 and 7.3). By invoking the idea that their games and devices are time wasters, participants critique (adult) rhetoric about their educational utility. Participants use the discourse while simultaneously undermining its normative claims about the value of school-authorized technology practices. In contrast, digital literacy underlife practices perform important social cohesion and identity work, both individually and collectively (cf Camitta 1993; Shuman 1986).

Frustrating and satirising school practices

In addition to mashups and time wasting, participants subverted school literacies by frustrating and satirising them. As a result, school practices, established norms and representations were undermined and undercut. Two examples are presented below (see Extracts 7.19 and 7.20). First, students from Basso succeed in getting the school blocked from Wikipedia:

1. SB I'm interested in the kinds of stuff, what you guys kind of do when you're online, um at home versus what teachers ask you do at school online, or with computers and the differences?
2. Rob For the school, Google and Wikipedia are the favourite sites, cause it's always information
3. Sarah Or you can change stuff on Wikipedia
4. SB Yeah, have you ever done that?
5. David Yeah Wikipedia is really good if you're looking up//
6. Rob We managed to get the school banned from Wikipedia
7. SB From Wikipedia, really?
8. Sarah Yeah
9. Rob For a few days at least
10. David We're not sure we're allowed back on
11. SB Did the Wikipedia people ban you did they?
12. All Yeah
13. David Their administrators
14. Sarah Mostly because people would just go delete whole pages of information and write like 'you smell' on there=
15. David =Yeah write personal messages

Extract 7.19 (Basso)

Students recount using school computers to deface and delete sections of Wikipedia (lines 3, 14–15). Due to these actions and because students used school computers, the whole school was blocked from the website for a period of time. But rather than see the ban from Wikipedia as either a problem for Basso or as a serious mistake on their part, Rob (again using the inclusive ‘we’) celebrates the ban as a success (line 6). Through subversive actions such as these, the students see themselves accruing kudos and social capital with peers. In the second example, students from Highview digitally alter photographs of teachers, students and other school staff and use a banned messaging function built into the school’s network:

1. Danny And yeah, like we’ve got this thing like MSN on the computer, it’s like Novell
2. SB Yeah Novell, it’s got a messaging system?
3. Danny Yeah, and people like hack into teachers’ and they just send it *((a message))* to everyone. And then like five minutes later Mr Barclay’s at the classroom where it happened, it’s so funny
4. SB Tracking people down?
5. Danny Yeah, Brad got sprung doing it
- [...]
6. SB I saw a couple of you grab photos off the intranet and//
7. Danny And we edit them and stuff
8. SB Yeah edit them and=
9. Danny =Yeah, for a laugh
10. SB How often do you do that and why?
11. Danny Oh, sometimes, if we’re bored and we’ll find pictures on the library thing, we used to edit them

Extract 7.20 (Highview)

Highview IT staff monitor the network messaging system so that students misusing it can be quickly identified. Yet despite the threat of discovery, students use the messaging system, undermining the original intent of the software, meant for use by technical staff. Danny mentions a friend being ‘sprung’ using the system to communicate with friends—an unauthorised use. Brad’s retooling of the messaging system frustrates attempts by the IT staff to control the network and ensure its use for school purposes only. Danny also recounts the use of basic image editing software (MS Paint) to digitally alter photos of staff and students obtained from the school’s website; students stretch, shrink and pull images out of shape creating disfigured photos which

are funny, irreverent and grotesque. I observed the students doing this in computer labs during classtime, flicking between classwork and their image editing. Danny and his friends are engaged in subversive and satirical acts that are also creative, poking fun at teachers and other students with materials and resources 'provided' by the school (cf Pope 2005). Both these actions subvert school practices and technologies but do so using school-authorised technologies.

Tactical use of school resources

In this final section, I discuss four examples of how young people in the study used school-authorised technologies for their own ends. This tactical use of school resources subverted authorised uses of technologies. The first two examples were presented earlier in relation to other issues, but are used again here (see Extracts 7.1 and 7.2). First, in Extract 7.1, Jim and Mary discuss using Bankston's quicker internet to download personal items. Despite the reality of Bankston's lamentable internet speed, which may not be as fast as their home connections, Jim and Mary are willing to contemplate using the school's resources in a tactical way to achieve their goals. These intentions subvert the school's stated intention which is to provide internet access for strictly educational purposes. Second, in Extract 7.3, Rob, asserts that if Basso ever provided laptops to students he would refuse to use his for work and instead use it for games. Rob claims that if he had a school laptop he would reject the schooled vision of technology use and pursue alternatives, challenging school ideas about what constitutes proper educational use of a school-authorised device.

In the third and fourth examples below (see Extracts 7.21 and 7.22), students make tactical use of school computers and networks to store and hide computer games and other software for later use. First, Rob and David are browsing the Basso network looking for games left by students:

1. Rob Oh, we've managed to be able to sneak in a game onto our h-drives
2. David Oh, don't tell me that's the game I want to play
3. Sarah There is one, there's a whole bunch of games on the Year Seven h-drives
[...]
4. Rob Let's have a look through and see if we can find anything on the i-drive.
((browsing in Windows Explorer)) Students (.) work (3.0) Okay, now we're
in the Year Nine folders *((continues to browse))* a::h
5. David *((looking on as Rob browses the folders))* Maybe they got rid of it?

6. Rob I think so
7. David Go to Year 10
8. Rob I'm sure they got rid of it. It's so annoying, that you don't know where it is, maybe there was one

Extract 7.21 (Basso)

The students store games on the computers and the network for later use, finding tactical uses for the school-authorized technologies, reworking the hardware supplier and administrators' original intentions for the devices in order to fit the students' own goals (cf de Certeau 1984). They are not always successful, but they are able to keep some games on the network without being detected.

In the second example, Playford students employ a similar tactic. Alex, Michael and some friends discuss games they have hidden on the school's network:

1. Alex What games are on there?
2. Michael We can show you (heaps) of games (if you want), Red Alert
3. Male (Wow) Red Alert!
4. All *((laughing))*
5. Alex What games are on there?
6. Michael Um, what have I got?
7. Male It's because we've got way too much time on our hands
8. Male Yeah
9. Michael We've basically got everything you need *((counting the hidden games on his computer))* It's got like Firefox and (. It's really easy to do () at school

Extract 7.22 (Playford)

Both instances (see Extracts 7.21 and 7.22) involve the tactical use of school technology in order to subvert it, directing it towards ends other than those originally intended. They use the school network or computers to store games and other programs which aid in subversive and underlife practices and activities.

Participants employed subversive tactics as part of their digital literacy underlife in a variety of ways, many of which were subtle or contained forms of resistance (cf Goffman 1962). Students reframed time wasting as an accomplishment and as an alternative kind of work. They used school technologies and practices in ways that frustrated and satirised them and they used school resources in tactical ways to further their underlife practices. In the next section, I provide additional detail on a

characteristic integral to each of the broad practices discussed in the above sections—importing, workarounds and subversion—namely, their collaborative nature.

7.5 Tactical collaboration: collective knowledge and action

The analysis of the data suggests that digital literacy underlife practices were used across all the schools in forms of *tactical collaboration* between students and between students and teachers. The digital literacies detailed above were mediated through social relationships as well as through new technologies; they were not wholly individual acts but were achieved through collaboration and collective work between individuals and within various affinity groups (cf Gee 2003). In the context of underlife, collaborative practices were tactical because participants used them to assert and engage more effectively (eg covertly) in underlife practices (cf Larson and Gatto 2004). Tactical collaboration provided strength in numbers by building (often loose) collective cultures and group identities which made it easier for participants to sustain underlife practices.

Two specific forms of collaboration characterise forms of digital literacy underlife discussed in this chapter. First, young people collaborated as *active participants* where two or more individuals came together to perform a socially meaningful action. Second, collaboration existed more subtly as a *form of collusion* where individuals shared knowledge, ethical perspectives, goals and motivations towards and about a particular practice or set of practices, but where they did not always share active participation (in the sense of some identifiable social activity) (cf Camitta 1993). Where social action was involved, it was recognisable by those with shared knowledge and a shared group identity even though participation was not central for all. These two types of collaboration are not mutually exclusive and various combinations of each were found in the data.

Tactical collaboration between young people

A number of examples illustrate tactical collaboration between the young people. In an example from Bankston (see Extract 7.16), students discuss their use of graphics calculator games which are popular in-class ‘timewasters’, swapped regularly amongst students, both within and across year levels and within families. There is a strong sense

of the students' collective interest in using games like these and in the collective enterprise (or racket) involved in swapping and passing games onto others. Both these activities were not solo, isolated pursuits but involved a large community of players and sympathisers—a community of practice—within and across different year levels (cf Wenger 1998). As the game is shared between friends, colleagues and family members, a genealogy develops that is traced and retold as a kind of heroic story (like Prometheus stealing fire and giving it to the students). Ryan's sister gave the game to him, while she 'got it from someone else' (lines 12–13). Ryan passes it on to others and so it continues. Playing the game, and participating in the community of game players, is not simply a matter of individual technical action. It is accomplished through social actions with meaning made through participation in the community, with many 'members' not immediately connected by friendship or family (cf Wenger 1998). Ryan, from Bankston, relates another example of tactical collaboration:

1. Ryan Everybody wastes time playing Mario. In Maths everybody plays, um basically the whole year guys were playing Snake and the aim was to get the Level 99 score and when they finally got it there was a bug in it so the snake would stop except the head, and then the head would go around, it was like 'oh that is just stupid', and they were like 'we have to get to 100 then' so they would get the next block with that little head that's hanging around and the whole snake is just frozen
2. Jim And you can't see anything?
3. Ryan Nah you can, all you see is the head moving around and if you run into the snake that's frozen you're dead, and you can't go anywhere

Extract 7.23 (Bankston)

Playing 'snake' together in maths is a collaborative project where the boys, competing against the game, worked to master it by reaching the highest level and score. Such Herculean team efforts contrast sharply with visions of these boys doing maths work with similar enthusiasm. Again, this represents an example of a tactical effort to negotiate space for different practices and activities within the school. It is achieved, or negotiated, through collective action between friends and competitors, with immediate classmates, but also with a larger, informal network of other students in other classes.

There are similar instances elsewhere in the data. For example, David and Rob playing 'slime soccer' (see Extract 7.4). At a basic technical and practical level, their gameplay is scripted by the game design, but the nature of their participation includes more than the technical dimension. Collaborative elements are central to the activity. As they call the close misses and the successful goals, they build a sense of shared sociality and

identity as game-players and as knowledgeable experts (lines 2, 6–8, 11–13). There are also links to other shared practices involving similar activities (line 2: 'We have competitions ... and anytime we have a substitute ... '). Through tactical collaboration around the game, participants are able to create an alternative discursive space within the school. The boys in the Playford computer lab, who flick between their work and their games, while attempting to avoid their teacher's intrusions, are engaged in a similar tactical collaboration (see Extracts 4.1 and 7.2). Basso students, using the school's recently updated email system to playfully interact in ways characteristic of their IM use, also collaborate tactically to refashion the software for other uses and to frustrate school intentions (see Extract 7.15). Together these examples illustrate active collaboration and more subtle collusion through which group identities develop around shared digital literacy underlife practices. These examples also challenge longstanding stereotypes of computer gaming as socially isolating (cf Donnelly 1998; Gee 2007; Shaffer 2006).

Tactical collaboration between students and school staff

In addition to examples of student tactical collaboration, there was evidence of collaboration between students and teachers. There were two varieties: a teacher initiated action, implicit and explicit, which provided help or information to students enabling them to engage in underlife activities, and a *tactical alliance*, or tacit agreement, between students and teachers, about acceptable forms of contained underlife. These were forms of underlife that did not overtly challenge school rules, policies or teacher-student behavioural norms and which were commonly (and strategically) overlooked by teachers. These varieties of tactical collaboration between students and teachers are examples of collusion, one explicit, the other implicit. Collusion is unauthorised cooperation or conspiracy, where cooperation provides unethical or unfair advantage. While student-teacher tactical collaboration might be seen to position interests to be in conflict with each other, there were benefits for both parties. Three examples below illustrate these forms of teacher-student tactical collaboration (see Extracts 7.24–7.26). First, Jim recounts a class earlier in the year where he and his friends received help from a teacher to change internet settings on school computers:

Jim Like, the computer administrators, some of them are nice, like I when I had IT this year, at the start of the year, we'd ask the teacher to change some of the settings around for us and things so we could use sites and do things. He showed us how it worked which was pretty interesting so

Extract 7.24 (Bankston)

The provision of information by the teacher allows students to bypass school internet filters and access web materials not normally available. This kind of explicit tactical collaboration undermines school policy and the expected school norms and behaviours of teachers and students. Young people are not supposed to ask teachers to break school rules, while teachers are expected to rebuff such requests, not assist students in their efforts. It could be that the teacher has his own frustrations with school policies which make teaching with new technologies difficult. Informal conversations with staff at Highview, Middleton, Bankston supported such an interpretation. In showing students how to workaroud restrictive internet settings, the teacher acts against school policy to help students access resources useful for classwork. Teachers also engage in a variety of underlife practices—in this case to meet particular pedagogical goals (cf Brooke 1987; Goffman 1962).

Although explicit examples of student-teacher tactical collaboration exist, in most cases teachers and students did not actively collude to undermine school policy with respect to technology use in schools. The final two instances indicate more subtle, implicit collusion between students and teachers (see Extracts 7.25 and 7.26). In both examples, young people identify a tactical alliance or unspoken agreement between themselves and their teachers. At Bankston, students discuss phone use at school:

1. SB So, that's the school policy, but what actually happens? So most people bring their phones anyway?
2. All Yeah
3. Jim Some teachers are fine, Mr Mac won't mind, a lot of teachers won't ()
4. Tania As long as you keep it on silent most teachers don't mind
5. Liz I think they mind but just as long as you're not using them
6. All Yeah
7. Jim If you're just sitting there (using a phone) then they'll get told off for it
8. Tania Like the school will say that you will not get them back until the end of the week and they are meant to be given to the principal or the coordinators or something but most teachers give them back to you at the end of the period so, or at the end of the day
9. Liz Yeah they don't really mind a whole lot

10. Jim The real issue with that is that it's wasting time in class and kids aren't focusing
11. Ryan Yeah
12. SB That's the argument?
13. Liz If you bring it to class and don't use it//
14. Jim There's no issue
15. Mary Yeah
16. Jim But then again it's personal, it's up to the individual if they are going to call a friend or they're going to do the class work

Extract 7.25 (Bankston)

It is only when devices get in the way of regular classroom work that they become a problem. If they are kept out of sight and do not rupture the orderly façade, they are tolerated. This example and the next illustrate 'games' of unspoken agreement, conveniently feigned ignorance and strategic looking-the-other-way. Tactical alliances serve both parties in their efforts to resist broader school pressures and policies (cf Larson and Gatto 2004). They make it easier to get on with the job, rather than 'getting hung-up' on what can appear to be relatively trivial issues.

Practices and norms built up around tactical alliances were not always followed. While there is evidence of implicit agreements between staff and students around some issues of technology use, there were also times when students consciously broke these agreements to disrupt classes, to get other students in trouble or to have fun (see Extracts 7.6 and 7.7). Tactical alliances marked some forms of contained underlife as acceptable but no guarantees were given. This uncertainty is illustrated below in the final example. At Basso, students discuss school policy about mobile devices in class:

1. Rob And also, things like we can't, we, a lot of people bring their MP3 players to school and use them during class, which is what we're not allowed to, but//
2. David Some teachers don't mind, it depends where you use it
3. Kylie In maths
4. Rob 'Theoretically' we're not meant too
5. SB So the policy is 'no MP3 players, phones'//
6. Sarah No, not phones
7. David As long as it's not during class
8. Kylie But everybody has got them
9. Rob MP3 players are kind of allowed if it's more private work and they're not disturbing to the teacher or anyone else in the class, they might let you

10. Sarah It really depends on the teacher, cause even if we're doing silent work in say () we get decapitated ((*laughter*))

Extract 7.26 (Basso)

These students had no clear demarcation of the limits of the tactical alliance (lines 2, 4, 7, 9: 'it depends where you use it', 'theoretically', 'kind of allowed', 'they might let you', 'depends on the teacher'). The boundaries of acceptable and unacceptable use change and so 'to stay ahead in the game' students must understand differences between, for example, class context and teacher. While the privilege of using these devices openly in class may or may not be granted, teachers in the study used a 'flexibility within bounds' policy, where the implicit message was 'respect the boundaries and I won't come after you'. This practice is clearly a tactical response to school policy out-of-step with teacher and student realities. It is also a containment response and in fact can be seen to license contained forms of underlife, acknowledging that they are useful, acceptable and, indeed, necessary in some circumstances (cf Goffman 1962).

The contradictions and tensions between policy, rhetoric and reality outlined in this section were evident in all the study schools. They encouraged the development of tactical alliances—unspoken negotiations worked out between a large student body and a comparatively small number of staff. These negotiations included implicit compromises which mediated tensions between the school's prohibition policies and student resistance to such policies as well as the reality of student behaviour. Alliances between teachers and students were tactical because they allowed both groups to maintain the appearance of teacher authority, on the one hand, and the appearance of student compliance, on the other. Tactical collaboration provided agency within contained bounds, allowing students and teachers to undermine school policies that made it more difficult to 'make do' and to 'smooth out the terrain' (cf de Certeau 1984) of school-authorized technology use.

7.6 Negotiating digital literacies

This chapter has constructed an account of the participants' unsanctioned or unauthorised technology use within the study schools. The analysis identified three practices of negotiation, which made up part of the students' digital literacy underlife: importing and insinuating, workarounds and subversion. These practices constituted

'uses and tactics' (de Certeau 1984) employed for a variety of reasons in contained forms of underlife.

By importing and insinuating, the participants used unsanctioned technologies, cultural artefacts and practices to make institutional spaces more liveable, in the same way that a new home or room is decorated and furnished to make it more liveable (cf Lankshear and Knobel 2002). Within institutional places, other spaces were opened up, even if only occasionally and temporarily. By employing tactical workarounds they outmaneuvered established school technology practices and played havoc with schools' containment agendas. The participants used organised efforts and 'isolated actions, blow by blow' (de Certeau 1984: 37), rerouting and bypassing obstacles and blocks. The analysis of the data suggests that schools let students live contained underlives as long as these didn't threaten to destabilise the status quo too much or to disrupt school and classroom norms. Alternative spaces were created and sustained within contained forms of underlife. By employing subversion tactics, participants found creative uses for authorised technologies, using them against schooled ways of doing things while frustrating and satirising them. These digital literacy underlife practices represented an alternative social and technological economy within schools: an unofficial economy of underlife practices and actions which undercut, undermined and playfully negotiated alternatives to school identities and practices.

As the examples in this chapter suggest, focusing on young people's digital literacy underlife means rethinking the relationship between schools and homes (see 3.4) and how practices are negotiated across these domains. In the final chapter, I take up this issue. I also draw together the analysis of the data presented in chapters six and seven with the literature and theory discussed in part one (chapters two and three).

8

Renegotiating digital literacies in and around schools and classrooms

8.1 Revisiting the research questions

This thesis provides an account of how young people use new technologies in school. It focuses, in particular, on activities that were part of the participants' digital literacy underlife—tactical responses used to create spaces in schools and classrooms for unsanctioned work, play and meaning making. By generating detailed accounts of the participants' unsanctioned use of new technologies, the study aimed to better understand the implications for literacy learning.

The study pursued the following research questions:

1. How do young people use new technologies in schools and classrooms?
2. How do young people's activities with new technologies mediate their language and literacy learning?
3. What are the implications of young people's digital literacy practices for English/literacy curriculum in schools?

Because these questions overlap, I have not tried to separate them artificially in my analysis. In the interests of summary and clarity, I provide the following overview.

Questions one and two are considered primarily in chapters six and seven where I examined how the participants' experience of literacy and new technologies at school was shaped—both constrained and enabled—by the official school curriculum and also by participants' unofficial digital literacy practices. I found a common set of school-authorised technology practices across the schools: activities requiring students to use new technologies to locate, retrieve and repackage information, and also activities where students used new technologies to create school-like products and artefacts. The participants were critical of these school-authorised practices, finding the first, functional and unimaginative, and the second, 'fun' but 'pointless'. Many of the participants accepted that these activities made sense only within the classroom. Despite the participants' frustrations with the way new technologies were 'schooled', the study also found evidence of productive engagement, where some participants created opportunities within school tasks for the use of new technologies which connected to their own everyday and out-of-school uses. There was little evidence of wholesale disaffection despite ambivalence and apathy being common.

In contrast to these sanctioned uses, I found plentiful evidence of participants' tactical uses of new technologies: those which undercut, satirised and playfully engaged with school-authorised technology practices. Specifically, the participants employed three 'practices of negotiation'. First, they imported and insinuated into their schools proscribed technologies, software and practices. This strategy challenged the privileged position of school literacies and made school spaces more liveable. Second, the participants devised tactical 'workarounds' for technology restrictions and blocks imposed by the school. These brought knowledge and practices from across different domains to bear on the challenges some participants faced when engaged in underlife practices at school. Third, they subverted school practices with school-authorised technologies, inverting and using them in opposition to school ways of doing things. Through these practices, participants 'mixed' school and out-of-school practices and negotiated alternative spaces, identities and relationships within school environments.

Although issues relating to question two are also discussed, research question three provides the main focus for this chapter. I draw together various threads from the study to consider the implications of my analysis for the research and theoretical literature (see chapters two and three). I present the discussion in three related sections, focusing on how new technologies, literacy and curriculum were negotiated within the participants' school experiences. The first two sections discuss how new

technologies and literacy can be understood as negotiated practices. In the final section, I explore the implications of the study for the idea of negotiating the curriculum (see 1.4).

A central aim of this chapter is to show how the study extends thinking about literacy research and education. I am guided by Freebody's (2003) belief that educational research should aim to be three things: 'conceptually informative, professionally useful and ideologically productive' (p. ix). My intent is to indicate how the study achieves these goals.

8.2 Negotiating new technologies

The study has argued that a critical-historical perspective on literacy and technology encourages a sharper view of the relationship between literacies, new technologies, schooling and young people. This perspective highlights how 'historical contexts and social practices give essential shape and meaning to technological potentials' (Collins and Blot 2003: 171) (see 3.1). That is to say, 'technological potentials' are not necessarily hardwired into technological devices but are worked out, or negotiated, in different contexts and through social practice. From this perspective, new technologies do not come pre-packaged as neutral tools. They are already imbued with meaning and oriented to particular purposes and outcomes, and while they provide affordances that make some uses easier than others, these must jostle for position with the intentions of those who use them in particular settings. The use of new technologies is always negotiated. In the context of the current study, their sanctioned or unsanctioned uses are the outcome of various forms of negotiation, including at the level of discourse: 'technology practice' is a product of history and biography and their intricate relationship (cf 3.1). This is a key to understanding how the participants in the study engaged with new technologies.

The negotiated nature of technology in this study is illustrated through the participants' critical and creative use of new technologies in their schools (see chapters six and seven). The participants negotiated the intentions of the school, administrators and teachers, each other and the technology companies promising transformed learning, working with and against these intentions to enact alternatives. There were, of course, intended uses, but there were also enacted and negotiated uses and they tell very different stories about what goes on in schools when new technologies are used.

For example, some of the participants reframed educational devices as subversive. In the context of this study, a critical-historical perspective on literacy and technology suggests at least three ways of seeing new technologies as negotiated.

A critical-historical perspective foregrounds the often neglected social and cultural aspects of new technologies. This means moving the focus 'beyond technology' (Buckingham 2007), beyond a preoccupation with innovation and newness, or with the fetishising of the next 'killer application' for education, be it radio, television, computers, mobile learning, social networking, virtual worlds or high-speed broadband. Attention to the social and cultural means understanding how new technologies are the products of remediation; the process of 'newer' forms refashioning 'older' received forms (see 3.1). In this sense, 'new' technologies and 'new' literacies are hybrids of old and new technologies, media and practices. This insight challenges claims of uniqueness made by technology promoters and enthusiasts for the latest products. These tensions between the technical and the social, the old and the new, were evident in the study.

For example, while some students showed an interest in the technical (Jim, Ryan, Rob and Ben), calling for better quality computers and internet in their schools, others were interested in the social and cultural affordances made available by new technologies (Liz, Mary, Tania, Sarah, Danny, Jess etc). Mandi and Danny's insistence that teachers consider how technologies can be used more effectively in teaching, rather than for informing parents of student absences (see Extract 6.27), is another example of the tensions around these different views about the best use of new technologies in schools. My emphasis on unsanctioned practices illustrates how technology use is always about more than technical devices; it is also about choices between alternatives and about 'creole uses' which mix and match old and new, and which are never neutral.

A critical-historical perspective also encourages alternatives to discourses of technology-as catastrophe and technology-as-saviour, so often used to frame understanding of the relationship between new technologies, schools and young people (see 3.1). The study has attempted to move beyond positioning schools and curriculum as hopelessly out of step with the 'real' everyday lives of young people, or new technologies as the self-evident and (r)evolutionary saviour of education. Negotiating a 'middle road' between cynicism and hype has meant looking for evidence of connections between schools and young people's diverse cultural activities. This

necessitated taking participants' actions and motivations (as well as their apathy and ambivalence) as 'texts' to work with and against: to accept their engagement with new technologies, whether sanctioned or unsanctioned, as the only sensible and ethical place from which to begin thinking about the use of new technologies in schools. Again, similar views were evident amongst the participants as they negotiated between despairing about school-authorized technology practices and imagining richer possibilities for new technologies inside school. In many ways, they embodied a creative, hopeful and critical stance at the same time as they felt ambivalence and apathy about school uses of new technologies (see chapter six). The findings showed that the participants were not wholly disaffected as many engaged with school-authorized uses, even if only to subvert them (see chapter seven).

Moreover, a critical-historical perspective on new technologies in schools challenges the widespread assumption that young people are cyberkids and digital natives (see 3.4). It encourages a more careful consideration of the mediating role new technologies play in the lives of young people. While some participants had a keen interest in new technologies and represented themselves as particular types of technology users (eg Ben, Jim, Ryan, Liz, Lucy etc), others (eg Mandi and Bella) joked about their lack of interest in new technologies, cultivating an anti-cool, cool sensibility. Other participants negotiated this binary between interest and non-interest in more nuanced ways (eg Jess, Mary, Susie). For example, although Jess repeatedly claimed she wasn't 'into this whole technology thing,' she showed herself to be techno-savvy, cultivating a youthful identity based on her wide social network connected via mobile technologies. All the participants negotiated these tensions between different 'types' of new technology users and most did not comply with tags such as digital natives and cyberkids. Overall, the picture derived from the study is one of heterogeneity in terms of young people's interest in and engagement with new technologies.

These three ways of understanding new technologies as negotiated practices highlight the importance of a critical-historical perspective to inform an investigation of the use of new technologies in schools. The clearest way an ahistorical and asocial approach is manifest in schools lies in the assumption that technologies can be employed to perform school purposes, with little consideration of the range of other intentions rivalling for pre-eminence. Schools would do well to move beyond instrumental views of new technologies as standing ready to serve traditional educational purposes. When schools fail to engage in productive ways with the variety of students' digital

underlives, they miss opportunities to negotiate connections between young people's experience of the world and the kind of world schools imagine they are preparing students for.

This is not to say that adopting a critical-historical view of technologies will provide answers for all the challenges that schools and teachers face. Discourses of technology-as-catastrophe and technology-as-saviour (see 1.2) leave little space for reimagining the relationship between new technologies, literacy, young people and schools in more generative ways. But a critical-historical perspective can provide a starting point for a more thoughtful approach to 'questions concerning technology' as they relate to education and schooling, literacy learning and young people. This perspective more clearly contextualises the place and role of new technologies in schools (and their long and winding history), avoiding the kind of 'historical amnesia' (Selwyn 2002) common in discussions about their use in formal educational settings. Cultivating and employing such a perspective means acknowledging that there are alternatives to technological development: it is not inevitable but, rather, can provide a focus for debate about what is best in particular contexts. This also means seeing new technologies not as add-ons to schools but bound up in the very nature of schooling.

8.3 Negotiating literacies

Instead of understanding home and school as mutually exclusive domains and the practices of young people across these domains as often mismatched, this study has developed a view of young people's language practices and their engagement with various forms of digital culture at home and school as intimately connected. While schools and homes (as social institutions) are distinct places—in the types of activities they organise and support and in their typical discursive practices—it was impossible to disentangle these places, their practices and their ways of knowing in the lives of the participants. The home-school binary is seductive but questions need to be asked about the roles played by teachers, researchers, policymakers, students and others in constructing home and school as worlds apart, while at the same time working to overcome the effects of the 'disconnect'. In the broader context of young people's everyday lives, tightly bounded distinctions separating particular literacies and technology practices into discrete home and school domains can mean less attention to the important connections between these places.

The relationship between different domains and their associated discourse communities is complicated; their boundaries are always provisional, shifting, merging and permeable (see 2.3). Against tightly bounded notions of community, culture and identity, Bakhtin's (1981) dialogic theory suggests a dynamic and constitutive relationship between domains and communities, such as school and home, and the literacies and practices associated with them (cf 1.4). In other words, these domains overlap and 'interanimate' each other (Finders 1997: 18) so that 'each community's beliefs, values, and language system (including its way of speaking) are exchanged, resulting in ephemeral identities' (Cintron 1991: 24). Reframing domains, discourse communities, literacies and their associated practices in this way means understanding them as sites of continuing exchange and (re)negotiation, rather than as static and stand-alone contexts (see 4.4).

Throughout the study, Bakhtin's work has helped me to see young people as engaged in navigating a dynamic landscape of competing and interrelated voices as they move through social spaces. In this landscape, they are not 'joining a chorus of like voices, but, rather, entering into dialogues with many other speakers, both present and long since gone' (Dyson 2003: 13). The voices they encounter index various social languages, each with preferred genres and categories, and with histories which predate the arrival of young people into the landscape. Some of these social languages are powerful, authoritative discourses 'that approach [young people] from without' (Bakhtin 1981: 424) and which have designs on and intentions for them. These discourses are negotiated with the aid of young people's 'internally-persuasive discourses' (Bakhtin 1981) and by employing 'tactics' (cf de Certeau 1984), such as recontextualisation and irreverence (see chapters six and seven).

There are a number of other conceptual frames which proved significant in developing the idea of literacies as negotiated advanced in this thesis (see 2.3, 2.4 and 3.4). Bourdieu's (1977, 1990) concept of habitus, for example, can be seen as dialogically produced within the flows of everyday life, across the various space-times that individuals and groups inhabit and create. The formation and reformation of the habitus can be viewed, not as a product of any one place, but of interanimations with many places. Dyson (1997, 2003) and Finders' (1997) notion of the home-school boundary as 'permeable' was also useful. As were Prinsloo's (2004) understanding that children's meaning-making during play is 'multisourced' from across domains and combined in new ways and Pahl's (2006) idea of young people 'picking up' various

'traces' (ie discourses, orientations, preoccupations) as they move about in social space with the traces 'sedimenting' into identities traceable in the texts they create. All these ideas made an invaluable contribution to my thinking about how young people negotiate their digital literacy practices across domains.

Metaphors about permeable domains and the like suggest that young people's use of literacies and new technologies dynamically link different domains. This conceptual work has enabled me to think about the connections rather than the disconnections between young people's literacy activities and their use of new technologies across home and school boundaries. The participants somehow made sense of and negotiated the distances they encountered between what was on offer to them at school and their out-of-school practices, goals and future trajectories. The study has illustrated some of the tactics participants used to negotiate these various competing discourses, ways of knowing, rules and systems in different domains. Their responses, reactions, frustrations and creativity (see chapters six and seven) are drawn from across their histories and networks of social relations, rather than from disconnected experiences in separate domains.

These arguments about the important connections between domains provides a counterpoint to the perspective on literacy as situated; they provide a sense of the limits of the local in explaining the meaning of literacy and new technology. The situated perspective on literacy, while a powerful antidote to accounts of the decontextualised consequences of literacy (see 2.2), is not without its problems. Specifically, investigations of literacies in particular domains such as home and school, can operate with strongly reified notions of such domains. In addition, attempts to document out-of-school literacies are often premised on the belief that when schools (and a broader public) recognise and better understand the diversity of literacies, such literacies will be taken up in classrooms. This desire for literacy equity has produced rich accounts of literacies in diverse contexts, but it has not lead to significant changes in the status of school literacy as literacy *par excellence*. This strategic failure is not, however, because 'teachers do not recognise such practices, but that they think they have no place [in schools]' (Moss 2001: 149).

The tendency in NLS research to conflate school literacy with regulated formality, and out-of-school literacies with unregulated informality, means the connections and permeability between domains is frequently overlooked. Contemporary studies of

literacy require a more complex rendering of the relationship between children's activities and the literacy practices connected with schooling and other institutional domains. Maybin argues for the development of a similar understanding when she found, in her study of 10- and 11-year-olds' informal oral language use at school, that 'official literacy activities were not necessarily 'schooled' and unofficial activities were not completely 'vernacular' (Maybin 2007: 517). The reification of these domains and literacies masks the nature of literacy as a negotiated practice, continually recontextualised, borrowed and remediated. This is the nature of all literacies; there are no pure forms. Literacies are not simply situated but are stretched across domains and *multiply* situated.

Although forms of knowledge and discourse are strongly linked to the contexts in which they are produced, none of these are set in concrete. Some research suggests that structures of knowledge in 'horizontal discourses' (associated with informal, out-of-school environments) and 'vertical discourses' (with hierarchal, formal school environments) are largely incompatible (eg Bernstein 1996, 1999). However, this study indicates that the situation is not so straightforward. Vertical and horizontal discourses do in fact bleed into each other. For example, Moss shows how vertical discourses typically colonise horizontal ones, with 'discursive transformation' the result (Moss 2001: 155), a type of recontextualisation with practices and discourses often becoming more school-like. In these instances—where, for example, parents and young people enact school-type pedagogic practices in the home—discourses and practices take on both horizontal and vertical characteristics. So while vertical discourses are resistant to change, they are also always challenged and contested (cf 2.4).

This study has provided examples of students doing just that: challenging and contesting school discourses and practices by exploiting gaps within institutional and pedagogical processes. As a researcher this has meant paying attention to what is going on 'under the desk' as well as on top of it; examining the participants' unsanctioned activities and underlife literacies—the enacted curriculum—as well as the formal or intended curriculum. In the three underlife practices illustrated in chapter seven—importing and insinuating, workarounds and subversion—and in their overlap, the blurring of the home-school binary and the mixing of different discourses is clearly visible (cf Bulfin and North 2007).

In making such claims, I do not intend to downplay the challenges many young people face in bridging the divide between home and school. The kind of approach and analysis I am advocating provides a way to acknowledge the challenges faced by young people as they negotiate the requirements of schooled knowledges and discourses (to understand and to manage the differences between social languages and their relative status and power), and also to be attuned to possible connections that might be made between and across different domains of social and institutional life. In other words, seeing literacies as stretched across multiple domains allows recognition that there are differences between domains (ie their situatedness and context dependence) and that domains are permeable.

8.4 Negotiating the curriculum

While curriculum and pedagogy were not the main concerns of the study, my focus on the participants' unofficial digital literacies does have important implications for curriculum. Throughout this thesis, and over the course of the study, I have drawn on the work of researchers and theorists including Barnes (1976), Boomer (1988) and Bakhtin (1981) in an effort to understanding better how young people make sense of what they encounter in schools, especially as they engage with various literacies and new technologies. The idea of negotiating the curriculum has become an increasingly powerful metaphor as I have tried to extend it with the use of additional theoretical resources. In this section, I explore briefly what resonance this might have for English/literacy teaching and learning in the 'new media age'.

Earlier I suggested that there was value in taking the social, cultural and technological practices of young people as 'texts' for curriculum theorising and design. In this study, the participants took it upon themselves to smooth out the terrain of school policy and practice and to make the curriculum more hospitable. They exploited curriculum gaps with and without the knowledge of their teachers, engaging in activities outside the scope of the formal curriculum, but which might be seen as educationally valuable (see 6.4 and 7.5). Understanding a negotiated curriculum as deriving, in part, from the 'technology practice' (Pacey 1983) of young people opens up underlife as a resource rather than as a frivolous time waster, annoyance or danger. Below, I examine four complementary areas of focus which might inform such an understanding of negotiated curriculum.

There is value in considering the social and essentially playful nature of young people's unsanctioned technology use and encouraging similar creative engagement within the formal curriculum. The lack of attention paid to social aspects of young people's use of new technologies in school has resulted in an under-emphasis on the communicative significance of new technologies and an over-emphasis on the technical and operational. A greater focus on the playful would help redress this preoccupation and potentially provide authentic contexts for communication and engagement which more accurately reflect young people's everyday practices.

Another focus for negotiating the curriculum would see young people as critical and creative readers and writers, consumers and producers, of multimodal texts and products. The participants' digital literacy underlife provides salutary examples of this kind of work: remixes and mashups or activities which frustrated and satirised school practices. These involved the engagement of both creative and critical capacities—a kind of textual intervention with a view, again to the playful and irreverent. These underlife practices suggest curriculum models centred on the notion of 'design' (cf Kress 2003) rather than only on literary and social critique. Others have seen similar futures for English/literacy curriculum (eg Andrews 1992; Frow 2001; Green 2006) based on a rhetorical model which gives attention to the production and reception of texts and the development of an attitude of political/civic engagement. Examples of student subversion and underlife in this study illustrate the potential for young people to be creative and critical consumers and producers.

When considering the implications of digital literacy underlife for schools and English/literacy classrooms, a useful distinction is that between young people's abilities with *authoring* tools, compared to the ease with which many use *communication* tools. This distinction is increasingly tenuous as new technologies allow easier creation of content as well as access to it, but it does highlight how teachers and students might develop curriculum beyond resourcing or replicating older work practices (cf 6.2). The difference between authoring and communicating is shown in the example of the youth who created 'the weather' website, and his friends who used it (see 7.3). However, it is important to remember that Simon, the website's creator, is unusual; not all young people have or desire such skills, even though they may appear to have great facility with communication media, such as IM, SMS and social networking.

A further focus gives this kind of social, playful and creative work with new technologies a critical-historical edge (cf 3.1 and 8.2). This curriculum focus would encourage teaching not only *with* and *through* technologies but also *about* technologies (Buckingham 2007). This is not necessarily an argument for teaching computer programming or game design, but for teaching about technology as a practice and not simply as a tool or artefact. This means teaching about technology as a network of relationships and as a complex activity system, as a site for competing versions of the future and as a struggle over different cultural, technical, moral and political alternatives.

When combined with a rhetorical orientation, developing a critical-historical view of new technologies does not mean dismissing popular culture and admonishing young people for watching reality television and playing violent computer games. Instead, it means helping to attune them to how their lives are mediated by a wide variety of texts and technologies and providing curriculum space where the rhetorical work associated with such artefacts can be explored. English/literacy classrooms where this work is done would bring together multiple discourses, texts and practices to explore connections and disconnections, blends and mixes (cf 8.3). Developing a critical-historical perspective is more useful than using new technologies simply for engagement. Schools would do well to encourage deep intellectual engagement with literacies and new technologies.

A final focus for a negotiated curriculum considers the relationship between identity, new technologies and literacies. If curriculum is a design for the making of particular types of people, then the underlife practices identified in this study are reminders of how school curriculum and pedagogy can become curiously out of step with the kinds of identities formed in domains outside of schools. Within schools, as well, in curricular gaps and silences, in young people's individual and collective literacy underlives, unauthorised identities are being made. This identity making and remaking—through both sanctioned and unsanctioned new technology use—embodied a major form of work achieved by the participants. The study has described the kinds of identities available in schools to students as technology users: those offered by school understandings of the potential of 'ICT in education' and those which the students developed in opposition to these schooled identities. The study also described the participants' responses, frustrations and negotiations with these identities as they contested and challenged them.

These four areas can serve to open up curriculum spaces more amenable to digital literacy underlife, where young people can be encouraged to become ‘discerning participants in the diverse cultural activities that constitute their daily lives’ (STELLA 2005: 266). In addition to considering how a curriculum might prepare students for the future, in a new media age, curriculum must also enable young people to grapple with the demands of the present. Taking account of young people’s various experiences associated with new technologies—including unsanctioned digital literacies in school environments—is a productive beginning to the development of such a curriculum.

8.5 Final comments

Young people live across multiple domains of social and cultural life, embedded in complex relationships and discourse communities. Traces of their experiences are brought to school in their virtual schoolbags, as funds of knowledge and as dispositions sedimented and laminated into identities (cf 3.4). These traces can be both enabling and disabling, depending on where, in what domains and how they are employed. But, as the participants in this study have shown, there are ‘countless ways of making do’ and of getting by in the gaps of institutional life. This study has enabled me to inquire into how the participants *negotiated* their way within and across domains, practices, sites and identities, especially as their maneuverings related to the use of new technologies in schools.

There are two main limitations to the study. First, my central focus on young people in secondary school meant time spent in the homes of the participants was relatively brief. While I had planned to conduct home visits this proved difficult for a number of reasons (see 4.5). More data generated in homes would have strengthened my analysis of digital literacies across domains. Second, while I generated visual data (eg photos, video, web archives), I chose not to use these in the analysis represented here and instead foregrounded the interviews (see 4.5). The visual data provided useful contextual material. However, although their analysis would have been in keeping with moves towards multimodal understandings of practice, my theoretical sympathies were drawn to the group interview data. The interviews embodied more clearly, dialogic understandings of language and practice and fitted well with notions of curriculum as communication and as conversation (cf 1.4). Having made these points, I

conclude the thesis with some comments about future research on literacy, technology and schools.

If studies of literacy and technology are to provide more than the mere recognition of literacy and linguistic diversity, they must move beyond both the old and the new home-school mismatch hypotheses (see 2.2 and 3.4). Such framings of school and home do not adequately capture the complexity of how literacy and new technology practices are stretched across domains and are multiply situated. In this study, the hypotheses did not help explain the participants' experiences. Instead, the relationship between these spaces needs to be retheorised in light of new technologies and the practices they encourage and afford. Future studies should aim to provide examples of the connections between domains, or possible connections, rather than the perennially negative stories that criticise what goes on in schools. Critical-historical understandings of technologies and their social and cultural meanings also need to be brought to bear on efforts to understand these complex relationships. This study has provided evidence of young people using literacies and new technologies across the domains of school and home in ways that offer possibilities for critical and creative engagement within the official school curriculum.

Finally, the digital literacy underlife practices described in this study represented young people's attempts to negotiate alternative social, technological and discursive spaces within schools for unofficial practices, that were not initiated, set up or always approved by teachers. These practices created distance between the institution and the participants' sense of themselves, allowing them to indicate to others that they were not wholly consumed by the demands of school and by the identities on available there. The practices helped them to retain a sense of themselves as more than students—to negotiate the activities and identities in schools and to refashion and redesign others as they worked in the cracks and fissures of the curriculum.

Appendix A Extract from fieldnotes

Highview. TC. 10C. 29 May 2006. Period 2 & 3

<p>Period 2 9.28: Class wanders in bit by bit. TC is sitting at front of room using his laptop. Today is the class's last two periods and he is collecting textbooks and using a spreadsheet to record the book returns. When he calls student's names they bring their books up to the front. There is a relaxed and informal feel to the whole process.</p> <p>TC: Lauren? L: I didn't get one TC: You didn't get one? How bizarre D: (who is sitting at the back of the room and has overheard the conversation) Ha, 'how bizarre, how bizarre' [quoting pop song]</p> <p>TC continues collecting books until all the class is seated and asks for their patience.</p> <p>D: (to those student sitting nearby and to TCR) Can we play challenge? W: I'm the master at that! D: Nah, I dominate at dumb ass English! W: Ha, you dominate at dumb ass English, good one</p> <p>When TC is finished he hands over to the STer who begins the lesson.</p>	<p>This class is so different to NVE's. Some of these kids make so many pop culture references. It can be hard to keep up. In the course of the class: Big Brother, It takes Two, Pride and Prejudice, The Great Outdoors, Ernie Dingo, etc etc</p>
<p>The class is discussing prejudice as a scaffolding activity prior to an editorial writing exercise. The discussion is being lead by the student teacher. Her questions attempt to develop a sense of shared understanding about prejudice and it's various forms. After some questions and responses, she uses a handout showing pictures of various images that often invoke stereotypes and prejudice (see artifact 1-HV-29May).</p> <p>STer: What is prejudice? What forms does it take? St1: Racism? St2: Pride and Prejudice! Like the movie.</p> <p>...</p> <p>W: Yeah Ernie Dingo made The Great Outdoors [tv show]</p> <p>After this 'intro' to prejudice, the STer explains the writing task and sets the students to work. There is some disc abt the point of the task as the St know their reports have already been written.</p> <p>...</p>	

<p>W: Did you watch 'It takes two' last night? Crap!</p> <p>...</p>	
<p>Period 3</p> <p>Students are asked to continue the editorial writing exercise. There are some adjustments to the task; word limits etc STer says those who do not finish will be doing the work during lunchtime. Students grumble.</p> <p>Most of the class is fairly quiet and seems to be working towards finishing. Although my presence seems to be a disrupting influence as students want to play up for the audio recorder or chat (I have taught some of these students in the past).</p> <p>As students 'work' their talk moves naturally between regular stuff, their interests etc and the work.</p> <p>TC also makes it quite difficult for the STer to keep things moving along. He engages the St regularly in chat about a range of topics, rarely related to the task. He laughs and jokes with them throughout the lesson</p> <p>...</p>	<p>In this lesson I had a strong impression that this move back and forth bw different kinds of talk seemed very natural to some of these students</p> <p>Some of these St really like TC.</p>

Appendix B Interview schedule

First interview

Your background: What are your feelings towards school in general and English classes specifically? When did you first use ICT, how long have you had ICT in your home?

What things do you do with technologies: Can you show me your favourite websites or websites popular with you and your friends? Questions about specific technologies? ie phones, use with the family, rules, school uses, pranking, computer games, fanfiction, subcultures, music

Technology and school: How is technology used at this school? Can you give some examples? (both positive and negative) Describe a typical school day.

In and around class and school: What kinds of things do you do at school with technology? What kinds of things do you do at home or in other places? During a normal day/week what kinds of technologies would you use? What would you do with these?

Other: Do you have any questions?

Second and follow up interviews

More background and personal history: Your interests, goals, beliefs? How would you describe your technology ability, skill or interest?

Future ambitions: What do you see yourself doing in the future? Are you preparing for this now? What new technology might your future career use?

Popular digital interests: are there online sources of info about your interests? Online communities? Tell me about online bullying?

Home practices: what do you do with technology in the home? What is your most important technology? The family's most important? What do your other family members do with technology? What do your parents do? Are they skilled, unskilled with ICT? What rules etc do they impose? Do you follow these rules?

Work practices: what do you do for work? Does it involve using technologies?

How do you use particular technologies? phones, computer, internet, myspace, cameras, email, games, mp3, etc

How would things be without ... a phone? A computer? etc What would you miss the most?

Appendix C Transcript conventions

//	interruption of the speaking turn by next speaker
=	latched turn, no pause between speakers
((comment))	descriptions in double parentheses are researcher comments and clarifications
CAPITALS	upper case indicates a raised or shouted utterance
<u>Underlined</u>	represents speaker emphasis
()	empty parentheses represent untranscribable words or phrases
(text)	words within single parentheses are researcher's best guess about difficult to transcribe speaker's
[Square bracket indicates overlapping talk
(1.0)	pause in seconds
(.)	an untimed pause
:	a colon between two letters in a word indicates that the speaker has drawn out the sound of the word
[...]	deleted text

Appendix D Extract from interview transcript

- Mary I don't know, Liz just made it and it's a group and I'm in it, that's all I know about it
- Jim You can end up devoting a fair bit of time to a lot of things and it's pretty hard tech-prob, myspace—
- SB Do you find the time?
- Jim Yeah, like some of the people, like I suppose Liz like she goes on myspace a lot, so she's dedicated and stuff. Whereas like myself, I can't get on there that often because I've got a million and one other things to do on the internet so, if I was unemployed and I wasn't doing school then I'd have plenty of time but that's not the case
- Tania Two and a half months of holidays getting on myspace
- SB Yeah, great, yeah
- Tania I went on myspace the other day and some creepy old man's profile, and it was weird and creepy
- Jim But there's not really a purpose. It doesn't actually serve any realistic purpose vself-tech
- Mary Yeah, I don't know why people are so obsessed over it
- Jim I think it's because you get to talk to people and stuff
- Tania But MSN is so much better. Phones
- Mary But it's almost pointless
- Jim And show yourself off and stuff
- Tania And you take images
- Mary It's not like this, it's more like this
- Tania Yes, I use MSN a lot msn
- Mary Yes, so do I
- Jim It's not MSN anymore, its WindowsLive
- SB Yeah, WindowsLive, that's right
- Tania No, it's always going to be MSN
- Mary I know, me too, that's right, I still think of it as being MSN vself-tech
- SB You think they were crazy to change the name because everyone knows it as MSN
- Jim () It looks a lot better now
- Tania Yeah, I like the new, how they've//
- Mary It's good, yeah//
- Tania Got all the new updates and everything
- Female Yeah, the features and stuff are good too
- SB So how long would you spend on MSN like per day? An hour or two a day? msn
- Tania I mainly just logon and then walk away and then people start talking to me and I'll be attracted to it again home-use
- Jim It wouldn't be a like a straight one hour, um like when I do it I'm doing other stuff at the same time//

- Mary Yeah you're kind of be doing
- Tania Yeah, it's when I'm doing stuff on the computer
- Jim Like I'm typing or researching then , and I'll say something back and then researching again
- Mary You said your thing doesn't flash when somebody talks to you
- Jim Yeah, I fixed that
- M Oh, okay
- Tania That's so annoying, the only way I know people are talking to me is when my screen starts flashing orange
- Jim That's because, like, um, the add-on, what's it called?
- Mary Plus? tech-savvy
- Jim Yeah, Windows Plus
- Mary What about it? You don't have Plus
- Jim Yeah I do
- Mary Do you?
- SB What's that?
- Jim It just adds extra features to MSN, like, twenty windows with heaps on the side and stuff, so it's tabbed
- Mary The thing that comes with the computer flashes, whatever, it is, is it Windows Messenger or whatever, the one that doesn't have a picture?
- Tania Yeah
- Jim No, the original one flashes but when you put Plus on and I want to put it in a tab version it doesn't flash
- Mary It does!
- Jim Well not for me, but anyway
- Mary Well you will have to change your system then ((laughs))
- Jim I will. And it does other things like you can change, if you're on or not and settings and stuff so you can have an auto message come up if you're not there saying, "I'm out at the moment. Leave a message" or whatever.
- Mary Oh, I should do that —
- Jim It's got other stuff, like, if you're using a computer at school or something you can go control space and it turns window into a network drive symbol, so teachers can't see subversion
- SB Ah, very nice
- Mary Yeah, but you can't even use that at school anyway because it's not installed
- Jim You can preinstall it onto something and then copy it across. That's how you do it

Appendix E Extract from research journal

8 Sept 2006

More interviews this week, three in fact. Tuesday I went to Highview to do the second installment of the teacher interview, but when I got there KB was not really in the mindset and need to talk about other things: her mum, school etc. NV was stressed by some problems with the school magazine and so I felt bad pushing him to be there. TC was filming some stuff with one of his classes all morning and didn't get my email the day before confirming, so he was unavailable. It was a bit of a waste of a morning but sometimes I guess this happens. When you are close to research participants, when they have been work colleagues in the past, you need to be flexible and be able to reschedule. In some ways I don't mind because it hopefully suggest that I'm not just there for a data grab. I did get to see the techs though which was quite interesting in itself; a completely different perspective. One reason this interview worked well is because when I was teaching at Highview I developed a good relationship with the techs. They were able to provide me with some policy docs and other reports that will prove useful when I come to write about the schools - which I should probably do soon.

Wednesday was Middleton. I interviewed CD. She is doing some really interesting work here in a new program called 'Bytes'. The school got a lot of money to develop some programs around ICT and CD applied for the job to manage the teaching and curriculum side of the project. Walking around Middleton you could be forgiven for thinking that only young teachers are hired here. Many of them are young early career teachers. CD has had some great opportunities to get involved in stuff early in her career. She says the school 'actively recruits younger teachers'. Much of the interview was focused around the 'bytes' program and the challenges and issues. In some ways this is not relevant to any of the students I'm working with as the program is for year 9, but it does give me an interesting picture of the school and their approach to ICT, which it must be said is fairly typical. CD also showed me around the IT labs and the new lecture theatre, which are all very impressive. They are building a special ICT area called the MERC, but this won't be finished till middle of next year. Perhaps there is a project there for the future?

Playford on Thursday. In the end there were only two students (at the moment), Alex and Tim, as the others were away of on camp. Two very different young men. Tim is an intelligent, mature sort who says he enjoys English and reading. He's white and firmly middle class. He seems responsible in the kind of conventional way that parents wish their teenage boys would be. He collects me at the office and walks me around and we chat quite easily. He says he enjoys science too, and has an older brother at the school. Alex is also friendly but is not as chatty as Tom. He seems to see the interview as a chance to get out of class for an hour. He's not the stereotypical computer geek but seems to enjoy the opportunity to show me how he has found a way around the school's computer system. He's interested in cars and girls, and seems to know his way around a computer. He and Tim are not in the same peer group, but don't seem to have a problem with each other, or at least not while I'm there. Alex's crowd are the 'wogs' (as he calls them).

The interview is an interesting one as the guys are on the computers while we are talking, they navigate to various webpages and show me various things they like doing while online. This makes conversation a little different and the interview becomes a more structured one, where I get shorter answers as they are also concentrating on the computers. I let them run with this and occasionally take some footage of what they are doing, and try and get them to explain what it is they are doing. It would have been good if I have video taped this entire interview. At times I struggle to focus on the interview and I seem to jump around a bit from topic to topic. We cover most things, but not in great depth. While I was at Playford, Jim introduced me to a Y12 student who had made a radio controlled skateboard powered by a model aeroplane propeller/motor. This student had mounted his phone on the device and had some interesting footage.

Appendix G Publications relating to the thesis

- Bulfin, S. (2006a) *Being digital in home, school and community: Digital cultures and young people in Australia*. Paper presented at the Monash International Conference in Prato, Italy, April 2006
- Bulfin, S. (2006b) *Digital literacy practices across home, school and community: Beyond powerful and essentialising binaries*. Paper presented at the Conference of the Monash Education Research Community (MERC), Monash University, Melbourne, Australia, May 2006.
- Bulfin, S. (2006c) *Moving beyond binaries? Digital literacies across home, school and community*. Paper presented at the Conference of the Australian Association for the Teaching of English (AATE), Darwin, NT, Australia, July 2006.
- Bulfin, S. (2007a) Imagining 'digital youth' differently. *Teacher: The National Education Magazine*, June, 56-7.
- Bulfin, S. (2007b) Screenagers and the net gen. *Around the Globe* 3 (3): 34.
- Bulfin, S. (2007c) Learning (to learn) against the grain? *English in Australia* 42 (2): 65-68.
- Bulfin, S. (2008a) *Renegotiating digital literacies in and around the curriculum*. Paper presented at the AATE/ALEA Conference, 6-9 July, Adelaide Convention Centre, Adelaide, Australia.
- Bulfin, S. (2008b) *Making do in secondary school: Hidden literacies in the underlife of adolescents*. Paper presented at the Monash Educational Research Community (MERC) Conference, 4 July, Monash University, Melbourne, Australia.
- Bulfin, S. and North, S. (2006) *The literate spaces in/between: Reframing the school-home binary*. Paper presented at the Conference of the Australian Systemic Functional Linguistics Association (ASFLA), Armidale, NSW, Australia, Sept 2006.
- Bulfin, S. and North, S. (2007) Negotiating digital literacy practices across school and home: Case studies of young people in Australia. *Language and Education* 21 (3): 247-63.
- Bulfin, S. and Taylor, C. (2007) *Cyberkids or slackers? Young people, technology use and literacy learning*. Paper presented at the Conference of the Australian Association for the Teaching of English (AATE), Canberra, ACT, Australia, July 2007.
- North, S., Snyder, I. and Bulfin, S. (2008) Digital tastes: Social class and young people's technology use. *Information, Communication & Society* 11 (7): 895-911.
- Snyder, I. and Bulfin, S. (2006) *Digital literacy: What it means for English Education*. Paper presented at the conference 'Why English? The Aims and Values of the School Subject', University of Oxford, Oxford, UK, October 2006.
- Snyder, I. and Bulfin, S. (2007) Digital literacy: What it means for Arts education. In Liora Bresler (ed) *International Handbook of Research in Arts Education* (pp. 1297-1310). Dordrecht, Netherlands: Springer.
- Snyder, I. and Bulfin, S. (2008) Using new media in the Secondary English Classroom. In D. Leu, J. Corio, M. Knobel & C. Lankshear (eds) *Handbook of Research on New Literacies*. Mahwah, NJ: Lawrence Erlbaum.
- Snyder, I., Wise, L., North, S. and Bulfin, S. (2008) *Being digital in school, home and community*. Melbourne: Monash University.
www.education.monash.edu.au/research/projects/beingdigital

Appendix H Human ethics approvals

MONASH University



Standing Committee on Ethics in Research Involving Humans
Research Office

Assoc Prof Ilana Snyder
Faculty of Education
Clayton Campus

3 April 2006

2006/067 – English at the interface: Literacy, technology and young people's lives

Dear Researchers,

Thank you for the information provided in relation to the above project. The items requiring attention have been resolved to the satisfaction of the Standing Committee on Ethics in Research Involving Humans (SCERH). Accordingly, this research project is approved to proceed.

Terms of approval

1. This project is approved for five years from the date of this letter and this approval is only valid whilst you hold a position at Monash University.
2. It is the responsibility of the Chief Investigator to ensure that all information that is pending (such as permission letters from organisations) is forwarded to SCERH, if not done already. Research cannot begin at any organisation until SCERH receives a letter of permission from that organisation. You will then receive a letter from SCERH confirming that we have received a letter from each organisation.
3. It is the responsibility of the Chief Investigator to ensure that all investigators are aware of the terms of approval and to ensure the project is conducted as approved by SCERH.
4. You should notify SCERH immediately of any serious or unexpected adverse effects on participants or unforeseen events affecting the ethical acceptability of the project.
5. The Explanatory Statement must be on Monash University letterhead and the Monash University complaints clause must contain your project number.
6. **Amendments to the approved project:** Changes to any aspect of the project require the submission of a Request for Amendment form to SCERH and must not begin without written approval from SCERH. Substantial variations may require a new application.
7. **Future correspondence:** Please quote the project number and project title above in any further correspondence.
8. **Annual reports:** Continued approval of this project is dependent on the submission of an Annual Report. Please provide the Committee with an Annual Report determined by the date of your letter of approval.
9. **Final report:** A Final Report should be provided at the conclusion of the project. SCERH should be notified if the project is discontinued before the expected date of completion.
10. **Monitoring:** Projects may be subject to an audit or any other form of monitoring by SCERH at any time.
11. **Retention and storage of data:** The Chief Investigator is responsible for the storage and retention of original data pertaining to a project for a minimum period of five years.

All forms can be accessed at our website www.monash.edu.au/research/ethics/human/index.html

We wish you well with your research.

Dr Andrea Lines
Interim Human Ethics Officer (on behalf of SCERH)

Cc: Mr Scott Bulfin



Department of Education & Training

Office of Learning and Teaching

SOS003217

Mr Scott Bulfin
Faculty of Education
Building 6
Monash University
Wellington Road
CLAYTON 3800

Dear Mr Bulfin

Thank you for your application of 21 March 2006 in which you request permission to conduct a research study in government schools titled: *English at the Interface: Literacy technology and young people's lives*.

I am pleased to advise that on the basis of the information you have provided your research proposal is approved in principle subject to the conditions detailed below.

1. Should your institution's ethics committee require changes or you decide to make changes, these changes must be submitted to the Department of Education and Training for its consideration before you proceed.
2. You obtain approval for the research to be conducted in each school directly from the principal. Details of your research, copies of this letter of approval and the letter of approval from the relevant ethics committee are to be provided to the principal. The final decision as to whether or not your research can proceed in a school rests with the principal.
3. No student is to participate in this research study unless they are willing to do so and parental permission is received. Sufficient information must be provided to enable parents to make an informed decision and their consent must be obtained in writing.
4. As a matter of courtesy, you should advise the relevant Regional Director of the schools you intend to approach. An outline of your research and a copy of this letter should be provided to the Regional Director.

2 Treasury Place
East Melbourne, Victoria 3002
Telephone: +61 3 9637 2000
DX 210083

GPO Box 4367
Melbourne, Victoria 3001



5. Any extensions or variations to the research proposal, additional research involving use of the data collected, or publication of the data beyond that normally associated with academic studies will require a further research approval submission.
6. At the conclusion of your study, a copy or summary of the research findings should be forwarded to the Research and Development Branch, Department of Education and Training, Level 2, 33 St Andrews Place, GPO Box 4367 Melbourne 3001.

I wish you well with your research study. Should you have further enquiries on this matter, please contact Chris Warne, Project Officer, Research on (03) 9637 2272.

Yours sincerely



John McCarthy
Assistant General Manager
Research and Innovation Division

6 / 4 / 2006

enc



Catholic Education Office
Archdiocese of Melbourne

In reply please quote:

GE06/0009
1181

3 April 2006

Mr S Bulfin
Faculty of Education
MONASH UNIVERSITY VIC 3800

Dear Mr Bulfin

I am writing with regard to your letter of 22 March 2006 in which you referred to your forthcoming research project titled *English at the interface: Literacy technology and young people's lives*. You have asked approval to approach a Catholic secondary school in the Archdiocese of Melbourne, as you wish to involve students aged 15–16, and their parents and English teachers.

I am pleased to advise that your research proposal is approved in principle subject to the following standard conditions.

1. The decision as to whether or not research can proceed in a school rests with the School Principal. So you will need to obtain approval directly from the Principal of each school that you wish to involve.
2. You should provide each Principal with an outline of your research proposal and indicate what will be asked of the school. A copy of this letter of approval, and a copy of notification of approval from the University's Ethics Committee, should also be included.
3. A Criminal Record check is necessary for all researchers visiting schools. A certificate may be obtained on application to the Victoria Police and this must be shown to the Principal before starting the research in each school.
4. No student is to participate in the research study unless s/he is willing to do so and informed consent is given in writing by a parent/guardian.
5. You should provide the names of schools which agree to participate in the research project to the Knowledge Management Unit of this Office.

...2

Mr S Bulfin

- 2 -

3 April 2006

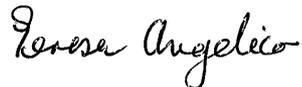
6. Any substantial modifications to the research proposal, or additional research involving use of the data collected, will require a further research approval submission to this Office.
7. Data relating to individuals or schools are to remain confidential. The video of students must not be shown to anyone other than the researchers or subjects involved in the project and should only be used for purposes directly relating to the research.
8. Since participating schools have an interest in research findings, you should discuss with each Principal ways in which the results of the study could be made available for the benefit of the school community.
9. At the conclusion of the study, a copy or summary of the research findings should be forwarded to this Office.

I wish you well with your research study. If you have any queries concerning this matter, please contact Mr Martin Smith of this Office.

The email address is km@ceo.melb.catholic.edu.au.

Good wishes

Yours sincerely



Dr Teresa Angelico
ASSISTANT DIRECTOR
POLICY AND GOVERNANCE

Appendix I Example explanatory statement and consent form

Explanatory statement for students

21 August 2006

English at the interface: Literacy, technology and young people's lives

Dear Student

You are invited to participate in a research study related to literacy and technology that will be carried out at your school.

My name is Scott Bulfin and I am working with Associate Professor Ilana Snyder in the Faculty of Education at Monash University towards a PhD. The name of the project is 'English at the interface: Literacy, technology and young people's lives'. It focuses on understanding more about how young people use digital technologies like computers, video games and mobile phones in their lives outside and inside of school. I hope to be able to suggest ways that schools might better use technology for improving learning.

Participation will involve you keeping a diary/journal of your use of various technologies over about two weeks. I would also like to interview you and some other students from your class twice. These interviews would be more like informal discussions about how you and your friends use technology in your everyday lives. These interviews will be audio taped and last for up to 45 minutes. These will be scheduled on school days at a time agreed to by you and myself. The project will also involve observing technology use in your classroom over a few days.

In addition to the journal, interviews, and observations, I would like to take some photos and record video of you using various digital technologies. I would also like you to take photos and video of yourself using various technologies. This would be done at school and at your home at mutually agreed times and with a parent/guardian present. These images are for research purposes only, and if you give permission, may also be used in publications and reports of the research. While pseudonyms will be used to protect your privacy and identity where possible, the images may still be identifiable.

In the analysis phase of the project, your teacher may be given limited access to some of the data collected. This will help me make sure that the findings of the research will be useful to teachers and schools.

You may withdraw from any aspect of the study at any time without having to give reasons. Any reports produced based on the study will be available from the researcher or on the project website below. To comply with university and government privacy legislation, information collected and used during this project will be securely stored for at least 5 years with the researcher.

To contact the researchers about any aspect of this study, please contact the Chief Investigator:	If you have a complaint concerning the manner in which this research (2006/067) is being conducted, please contact:
Associate Professor Ilana Snyder ilana.snyder@education.monash.edu.au Phone 9905 2773 Fax 9905 2779	Human Ethics Officer Standing Committee on Ethics in Research Involving Humans Monash University VIC 3800 Tel: +61 3 9905 2052 Fax: +61 3 9905 1420 Email: scerh@adm.monash.edu.au

Yours sincerely,

Scott Bulfin
Faculty of Education, Monash University
Clayton, Vic, 3800, 9905 4055

Consent form for students

ENGLISH AT THE INTERFACE: LITERACY, TECHNOLOGY AND YOUNG PEOPLE'S LIVES

I agree to take part in the above Monash University research project. I have had the project explained to me, and I have read the Explanatory Statement, which I keep for my records. I understand that agreeing to take part means that I am willing to:

- keep a journal/diary for 2 weeks
- be interviewed twice by the researcher
- allow the interviews to be audio taped
- have photos/video taken of me as I use technologies at school and home
- take photos/video of my ICT use that will be used by the researchers
- be observed as part of the class by the researcher

I understand that my participation is voluntary, that I can choose not to participate in the project, and that I can withdraw at any stage without being penalised or disadvantaged in any way.

I also understand that I can request to view the relevant interview transcripts, photographs or video that contain information about me.

IF YOU AGREE SIGN BELOW

Signature:.....

Printed name:

Date:

ADDITIONAL CONSENT

I give permission for photographs/video to be used in publications and reports of the research. Understanding that while pseudonyms will be used to protect privacy and identity where possible, the images may still be identifiable.

Signature:.....

Date:

If you would like to participate in the project, please return this consent form to your teacher or use the postage paid envelope provided.

So that I can contact you, could you please provide your details below:

Name: _____ School: _____

Phone/mobile: _____

Email: _____

Appendix J Gee's seven building task of language

(Adapted from Gee 2005: 11-13, 98-101, 110-113)

1. **Significance:** how and what different things mean – the sorts of meaning and significance they are given – is a component of any situation
 - How is this piece of language being used to make certain things significant or not (meaningful, valuable) and in what ways?
 - What are the situated meanings of some of the words and phrases that seem important in this situation? (1)
 - What situated meanings and values seem to be attached to places, times, bodies, people, objects, artifacts and institutions relevant in this situation? (2)
 - What situated meanings and values are attached to other oral and written texts quoted or alluded to in the situation (intertextuality)? (3)
 - What Discourse models seem to be at play in connecting and integrating these situated meanings to each other? (4)
 - What institutions and/or Discourses are being (re-)produced in this situation and how are they being stabilised or transformed in the act? (5)

2. **Activities:** some activity or set of activities is a component of any situation (the specific social activity or activities in which participants are engaging; activities are, in turn, made up of a sequence of actions)
 - What activity or activities is this piece of language being used to enact (ie get others to recognise is going on)?
 - What is the larger or main activity (or set of activities) going on in the situation? (6)
 - What sub-activities compose this activity (or these activities)? (7)
 - What actions compose these sub-activities and activities? (8)

3. **Identities:** any situation involves identities as a component, the identities that the people involved in the situation are enacting and recognising as consequential.
 - What identity or identities is this piece of language being used to enact (ie get others to recognise as operative)?
 - What identities (roles, positions), with their concomitant personal, social, and cultural knowledge and beliefs (cognition), feelings (affect), and values, seem to be relevant to, taken for granted in, or under construction in the situation? (9)
 - How are these identities stabilised or transformed in the situation? (10)
 - In terms of identities, activities, and relationships, what Discourses are relevant (and irrelevant) in the situation? How are they made relevant (and irrelevant) and in what ways? (11)

4. **Relationships:** any situation involves relationships as a component, the relationships that people involved enact and contract with each other and recognise as operative and consequential.
 - What sort of relationship/s is this piece of language seeking to enact with others (present or not)?
 - What sort of social relationships seem to be relevant to, taken for granted in, or under construction in the situation? (12)
 - How are these social relationships stabilised or transformed in the situation? (13)
 - How are other oral or written texts quoted or alluded to so as to set up certain relationships to other texts, people, or Discourses? (14)

- In terms of identities, activities and relationships what Discourses are relevant (and irrelevant) in the situation? How are they made relevant (and irrelevant) and in what ways? (15)
5. Politics (the distribution of social goods): any situation involves social goods and views on their distribution as a component.
- What perspective on social goods is this piece of language communicating? (ie what is being communicated about normal, right, good, correct, proper, appropriate, valuable, the way things are, the ways things ought to be, high status or low status, like me or not like me, and so forth?)
 - What social goods (eg status, power, aspects of gender, race, and class, or more narrowly defined social networks and identities) are relevant (and irrelevant) in this situation? How are they made relevant (and irrelevant) and in what ways? (16)
 - How are these social goods connected to the Discourse models and Discourse operative in the situation? (17)
6. Connections: in any situation things are connected or disconnected, relevant to or irrelevant to each other, in certain ways.
- How does this piece of language connect or disconnect things; how does it make one thing relevant or irrelevant to another?
 - What sorts of connections – looking backward and/or forward – are made within and across utterances and larger stretches of the interaction? (18)
 - What sorts of connections are made to previous or future interactions, or to other people, ideas, texts, things, institutions, and Discourses outside the current situation (what intertextual connections are made)? (19)
 - How is intertextuality used to create connections among the current situation and other ones among different Discourses? (20)
 - How do connections of the sort in 18, 19, 20 help (together with situated meanings and Discourse models) constitute “coherence” – and what sort of “coherence” – in the situation? (21)
7. Sign systems and knowledge: in any situation, one or more sign systems and various ways of knowing are operative, oriented to, and valued or disvalued in certain ways.
- How does this piece of language privilege or disprivilege specific sign systems or different ways of knowing and believing or claims to knowledge and belief?
 - What sign systems are relevant (or irrelevant) in the situation (eg speech, writing, images, gestures)? How are they made relevant (and irrelevant) and in what ways? (22)
 - What systems of knowledge and ways of knowing are relevant (or irrelevant) in the situation? How are they made relevant (and irrelevant) and in what ways? (23)
 - What languages in the sense of “national” languages like English, Russian, or Hausa, are relevant (or irrelevant) in the situation? (24)
 - What social languages are relevant (or irrelevant) in the situation? How are they made relevant (and irrelevant) and in what ways? (25)
 - How is quoting or alluding to other oral or written texts used to engage with the issues covered in questions 22-25? (26)

Appendix K Screenshot of text search

This screenshot shows a search for the term 'parents' in the interview transcripts. In the column on the right is an indication of the pages where the term appears. On the left are individual instances of the term highlighted. The program is Preview, a PDF and image viewing program included with newer Apple Mac operating systems.

The screenshot shows a PDF viewer window titled "combined transcripts_coded.pdf (page 2 of 230)". The search bar at the top right contains the term "parents". The main content area on the left displays the transcript text with several instances of the word "parents" highlighted in yellow. The right sidebar shows a list of pages where the term appears, ranging from Page 2 to Page 151. The search results on the left are as follows:

Speaker	Text	Highlighted Term
SB	In primary school? Yeah?	
Luci	We used to use a () program, I can't remember what it's called, but, like you make all these pictures and stuff and cartoon things at school	
SB	Like a paint program or something?	
Luci	Yeah ((unsure)) I forget what it was called though	
SB	Alright, I appreciate that, that's good. So for most of you it was in primary school pretty much, and early primary school too, grade 1, grade 2, grade 3 maybe. What about home? When did you first kind of have a computer at home? Or maybe you don't?	
Sasha	We got a computer last year	
SB	Yeah? OK, that's the first one you've had at home?	
Sasha	Um, my dad has his laptop that he was using for work and we were allowed to use that, but our first proper home computer we got last year	parents vtech
SB	OK	
Tim	Yeah, I think I got mine when I was about seven, earlier on (.) and we've still got it	vtech
SB	The same one?	
Tim	Yep, three gig ((smiling, some laughter from the others))	
SB	Three gig, I can remember when we had 20 meg hard drives and they were all the rage, and they were about that big ((gesture)) Sorry, enough about me.	
Luci	We've had about 15 computers ((laughing))	
SB	Oh, because your brother is a bit of a computer fan	
Luci	Yeah so at one point we had about eight computers in our house, it was so crazy, but yeah now we've got um broadband, we just got that last, um, in the middle of last year it was, so we've got that now, and we've just got, I've got a computer in my room now and Tom's (brother) got his laptop, we've got two downstairs (.) actually three, and we've got a server so the internet runs through all the computers like a network thing, (.) yeah, so it's a bit crazy ((laughing))	vtech
Brett	We've had a computer for ages. Our computers seem to last a long time. So we had a computer, Windows 95, up until maybe four years ago then we got a new HP, that was for the study, and the one that was really old died and I managed to convince my parents to buy me a new one, (.) that was good	vtech parents
SB	((Names thing)) We are talking about computers at home ...	
Ben	I started using a computer around grade 4, that was just for, I had games (.) ((laughter))	parents
SB	SO you mentioned that your nan, you started playing with the DOS games but then you got a computer at your place about the same time	
Ben	A bit after	
SB	At bit after, OK, Anyone else? Is there anything else in the other kinds of technologies at home?	
Tim	Gameboy	
SB	Gameboys?	
All	Yeah, yeah ((others concur))	
-	I've had one since year three (.)	
SB	The same one?	

The right sidebar shows a list of pages where the term "parents" appears, ranging from Page 2 to Page 151. The search results on the left are as follows:

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Appendix L Identifying literacy events, activities and practices

The following was part of an early data analysis process related to digital literacy underlife (see chapter seven). The document is a list of relevant instances from the data which were identified through the process indicated in appendix K.

'Underlife' events and practices

Event, activity:

- Deciding not to put schoolwork on his school laptop but to use it for games instead: T2.4-5
- Using msn in during classtime to 'insult' other students: T2.4-5
- Loading software (games) onto the school network and computers: T2.4-5; T2.21-23
- Playing games during classtime, including flash games, but also multiplayer games: T2.4-5
- Creating an 'underground' webiste that hosts games and other timewasters: T2.4-5
- Getting banned from the computers for playing games: T2.6
- Using the 'alt-tab' technique: T2.6
- Skipping class to remain in the interview: T2.6-7
- Modifying/defacing wikipedia with inappropriate material from school computers: T2.12
- Getting the school banned from Wikipedia: T2.12
- Using email in an msn fashion: T2.14
- Using the school email program to spam other students inboxes: T2.14
- Manoeuvring the computer so parents cannot see the screen: T2.17; T6.2
- Accessing blocked websites: T2.20-21
- Designing and creating a games website: T2.20-21
- Working around server blocks and accessing online games and websites: T2.20-21
- Understanding online language practices (using creative naming strategies) and using these to undermine the school blocks: T2.20-21
- Playing computer games when class has a substitute teacher: T2.21-23
- Storing games on the school servers that can be accessed later when needed: T2-21-23
- Using msn during classtime: T2.21-23
- Altering internet settings on the school computers in order to access blocked websites, such as hotmail and msn: T3.5-6
- Attempting to use popular culture in classroom assignments and projects: T3.6-7
- Using the 'webpage with a website' method of getting around blocks: T4.10
- Downloading music: T7.10-11
- (?)Burning music and data CDs containing downloaded music for friends: T7.10-11
- Using msn while doing schoolwork and assignments at home: T8.6
- Using the computer to do things against parent's wishes while parents are not around: T8.6
- Prank calling or txtng friends at school and in class on mobiles: T10.12; T14.8
- Having the 'correct' attitude for prank calls and to technology use more generally: T10.12
- Using alternative search engines not blocked by the school: T10.34-35; T18.21
- Hacking into teachers network and internet accounts: T10.34-35
- Passing on details about teachers' account information to other students: T10.34-35
- Using school software to send messages over the network to other students: 10.34-35
- Manipulating images of teachers and students with basic image software: 10.34-35
- Hacking the usual school networked PC and accessing the outside internet: T12.10
- Carrying, installing and playing games on school computers: T12.10-12
- Keeping games hidden on school computer HDD rather than the network were they are more easily detected: T12.10-12
- Bringing phones to school against school rules: T14.8
- Collaborating with teachers to bring phones to school and class: T14.8
- Negotiating the kinds of activities that are allowable in class with phones: T15.9
- Playing calculator games during classtime: T15.9-10
- Swapping calculator games with friends and family members: T15.9-10

- Planning ahead for downloading television and movies: T18.10
- Participating in an online group: (pants-free nation) T18.17
- Preinstalling programs on USB and copying them onto school computers: T18.19
- Using the school's faster internet speeds to download stuff: T18.19
- Logging into school computers as administrators to gain access to more network and internet privileges: T18.20
- Getting IT people to help subvert the school systems: T18.21
- Making up online identities to play on msn or in chatrooms and to fool other people: T19.10-11

Other events to be categorised:

- Email
- Internet information research
- Editing Wikipedia
- Designing and creating a website
- Including advertisements on a website
- Burning music and data CDs containing downloaded music for friends: T7.10-11
- Using game emulators to play older arcade games: T12.10-12
- Using google images at home to avoid problems at school: T18.20

Practices:

- Using outside technology or software inside the school: T2.4-5; T2.14
- Using technologies or software to frustrate school practices: T2.4-5; T2.14; T10.34-35
- Working around school rules, obstacles and blocks: T2.4-5
- Deliberate 'thumbing of one's nose' at authority: T2.4-5
- Continually devising new workarounds for school: T2.4-5
- Pretending to do school work while doing something else (ie 'alt-tab'): T2.6; T2.17
- Creating spaces in school for outside of school knowledge: T2.20-21
- Teacher and student mocking: T10.34-35
- Tactical collaboration between students and teachers: T14.8; T15.9; T18.20(?)

Appendix M CATERGORISING literacy events, activities and practices

During data analysis the list of events, activities and practices (see appendix L) was categorised as described in 5.3. Below is an early version of the practice categories which later formed the basis for chapter seven.

Digital literacy underlife events and practices

1. Using non-school-sanctioned technologies, software and literacies in school (or challenges to school literacies and practices using non-school sanctioned technologies and practices)

Use popular culture in classroom projects: 2.11; 2.15; 2.21; 2.13; 4.5-6; (and others)

Games:

Preinstalling software on USB drives for use in school: T18.19

Installing games and other software onto the school network: T2.4-5; T2.21-23; 12.10-12

Playing games during classtime including small flash games, but also multiplayer games (and being banned from the computers as a result): T2.6; 12.10-12; T2.4-5; T2.21-23

Using msn during classtime: T2.21-23; 2.4-5 (to 'insult' other students)

Phones:

Bringing phones to school and class: T14.8

Prank calling or txting friends at school and in class: T10.12; T14.8

2. Devising tactical 'workarounds' for school practices, hardware, software, rules, blocks and obstacles

Creating and maintaining a games website accessible from school: T2.4-5; 2.20-21

Working around school server blocks and accessing online games and websites: T2.20-21

Using the 'webpage with a website' method of getting around blocks: T4.10

Altering internet settings on school computers to access blocked sites: T3.5-6

Hacking the usual school networked PC and accessing the outside internet: T12.10

Using 'alternative' or modified search engines not blocked by the school: 10.34; 18.21

Logging into school computers as administrators to gain access to more privileges: T18.20

Hacking into teachers network and internet accounts: T10.34

Passing on details about teachers' account information to other students: T10.34

Keeping games hidden on school computer HDDs: T12.10-12; 2.21-23

These might be seen as tactical responses developed in response to school policy.

3. Challenges to school literacies using school-sanctioned technologies (and practices?) (but not always non-sanctioned practices)

Using the school email system to email-chat with and spam other students: T2.14

Modifying Wikipedia entries and getting the school banned from the site: T2.12

Playing calculator games during classtime: T15.9-10

Using school software (Novell) to send messages over the network to other students: 10.35

Manipulating images of teachers and students with basic image software: 10.35 (links to boredom and identity?)

Using the school's faster internet speeds to download stuff: T18.19

Using creative website naming strategies to undermine school website blocks: T2.20-21; 2.4-5

Deciding not to put schoolwork on a school laptop but to use it for games instead: T2.4-5

Storing games on the school servers for later access: T2-21-23; 12.10-12 (link to previous practice of workarounds?) (*Using technologies or software to do prohibited things or to frustrate school practices*)

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