

Building Equitable Literate Futures: Home and School Computer-Mediated Literacy Practices and Disadvantage

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ABSTRACT

This article examines the complex connections between literacy practices, the use of information and communication technologies (ICTs) and disadvantage. It reports the findings of a year-long study which investigated the ways in which four families use ICTs to engage with formal and informal literacy learning in home and school settings. The research set out to explore what it is about computer-mediated literacy practices at home and at school in disadvantaged communities that makes a difference in school success. The findings demonstrate that the 'socialisation' of the technology - its appropriation into existing family norms, values and lifestyles - varied from family to family. Having access to ICTs at home was not sufficient for the young people and their families to overcome the so-called 'digital divide'. The article concludes that old inequalities have not disappeared, but are playing out in new ways in the context of the networked society.

INTRODUCTION

The cover of a recently published book, *Creating Unequal Futures? Rethinking Poverty, Inequality and Disadvantage* (Fincher & Saunders, 2001), juxtaposes two pairs of shoes beneath the title. The shoes on the left are neatly aligned, black, shiny, expensive, almost new. Those on the right, tinted in sepia tones, are positioned more casually, well-worn, deeply creased, with one sporting a hole at the toe line. This image of advantage and disadvantage is evocative, but also somewhat misleading: poverty is not always so easily

discernible. Indeed, if we were unfamiliar with people's complex material and social backgrounds, and used only external attributes such as the condition of their shoes as markers, it might be difficult to distinguish the less advantaged from the more advantaged.

Just as the state of people's attire is not always a reliable indicator of relative advantage, access to computer technologies may be insufficient to determine whether or not people should be classified as technology 'haves' or 'have nots'. Yet many current assessments of our increasingly networked society argue that because access to the new technologies is unequally distributed, there is a growing divide - the so-called 'digital divide' - between the haves and the have nots (Castells, 2001). Intrinsic to this notion of the digital divide is the cachet society accords access to the new information and communication technologies.

At the global level, talk of those who have access and those who don't can be politically persuasive and strategic: the broad-brush stroke has the desired rhetorical impact and resonance. By contrast, at a local level, issues related to access require more sophisticated and textured accounts of the ways in which a number of interrelated critical elements and various dimensions of disadvantage come into play in different contexts. Indeed, to draw a simple dichotomy between the technology haves and have nots in local settings is not particularly generative. It may be, as the findings of the study reported here suggest, that even when people from poor backgrounds manage to gain access to technology, they remain relatively disadvantaged.

Our intention in this article is to provide a sense of the scope of the small-scale, intensive and multidimensional study we initiated to enhance understanding of the complex connections between literacy, the use of information and communication technologies (ICTs) and disadvantage. The year-long study examined the ways in which four families and the schools the children attend in the suburbs of Melbourne, Australia, use ICTs to engage with formal and informal literacy learning in home and school settings. The emphasis is on similarities between the families in their interactions with ICTs as well as potentially significant social and cultural differences.

What we mean by 'disadvantage' should already be emerging. As Travers and Richardson (1993) argue, being poor or disadvantaged is more than a matter of income. We can experience disadvantage or advantage through dimensions of our lives such as the characteristics of the neighbourhoods we inhabit, access to the collective resources of the communities in which we live, as well as through our income. Research using the term 'disadvantage' compares the circumstances of people or communities or places with others who are experiencing 'advantage' or who are living in 'average' conditions. 'Being disadvantaged is thus an explicitly relative state, but the term also has a strong normative connotation. To be disadvantaged is to be unfairly treated relative to others' (Fincher & Saunders, 2001, p. 8). Most importantly for our study, research using 'disadvantage' as a guiding concept often refers to disadvantaging processes - processes causing the production and reproduction of disadvantage for people and places.

When it comes to 'literacy', we make use of the concept of 'new literacy practices'. These refer to more than just reading and writing skills, which are only part of what people have to learn to communicate effectively in the 21st century. Indeed, given international developments in the fields that inform the study, it no longer makes sense to talk about literacy, technology and learning as separate enterprises: they are intimately interconnected (Snyder, 1998a; Lankshear & Snyder, 2000; Snyder, 2002). 'New literacy practices' refer to the ability to 'read' and 'write' all texts, signs, artefacts, nuances and images through which we come to understand and engage with society in the broadest sense. How to provide *all* students with the opportunities to acquire these literacy practices represents a profound challenge for educators and is fundamental to the study reported here.

BACKGROUND

Considerable theoretical and empirical work has examined the emergence of new literacy practices associated with the use of ICTs in school settings (Snyder, 1998a; Lankshear & Snyder, 2000; Loveless & Ellis, 2001; Durrant & Beavis, 2001; Snyder, 2002). In particular, this body of work recognises that reading and writing practices, conceived traditionally as print-based and logocentric, are only part of what people have to learn to be literate. Today, being literate is to do with understanding the complex ways in which the written, oral and audiovisual modalities of human communication are integrated into multimodal hypertext systems made accessible via the Internet and the World Wide Web.

Research attention has also been given to computer-mediated practices in home settings (Giacquinta, Bauer & Levin, 1993; Sefton-Green, 1998; Downes, 1999; Dede, 2000). There has been little research, however, investigating the connections between home and school *computer-mediated* literacy practices. This is somewhat surprising as the relationship between home and school literacy practices has been the focus of a number of important studies (Heath, 1983; Street, 1984; Prinsloo & Breier, 1996; Barton & Hamilton, 1998). These studies recognise the need to move beyond narrowly defined explanations of literacy to ones that capture the complexity of real literacy practices in contemporary society. As part of what is widely known as the New Literacy Studies (NLS), they emphasise the centrality of the social contexts in which literacy practices occur, directing attention to contexts of practice, to contrasts between home and school as sites of practice and to the relationship between home and school with respect to literacy learning (Baynham & Prinsloo, 2001).

In these studies, the focus has been on discerning the ways in which young people deploy linguistic resources, especially how they link communicative practices from one setting with those of another. Communicative competence - knowing when and how to use resources from different settings - is seen as affecting abilities to operate in different domains (Freebody, Ludwig & Gunn, 1995). Dynamic accounts of young people's 'ways with words' can help explain the link between social factors and school success (Heath, 1983; Street, 1998). Further, such accounts have important implications for curriculum and pedagogy.

The present study is informed by these understandings of literacy as social practice. It set out to investigate what it is about computer-mediated literacy practices at home and at school in disadvantaged communities that make a difference in school success, as perceived by both the consumers (the children and their parents) and the providers (the teachers) of literacy education. Integral to the study are three key understandings: the cultural and educational importance of ICTs; the centrality of the home in contributing to children's school-based educational outcomes as well as to post-school social, cultural and economic opportunities; and the home as a secure site in which people, both adults and young people, can acquire new literacy practices.

ACCESS TO COMPUTERS IN AUSTRALIA

Unlike television, computer-mediated communication is not yet a general medium in Australia, however, computer usage is increasing in all socioeconomic sectors. The Australian Bureau of Statistics (ABS) anticipated that by the end of 2001 it was likely that every second household in Australia would have Internet access (ABS, 2001). As might be expected, higher levels of both computer and Internet access occur in households with higher incomes. Access is also higher in households with children under 18 years, and in metropolitan areas. In terms of gender, there are very small differences between adult male and female computer and Internet usage (ABS, 2001).

When it comes to school computer use, the state of Victoria, of which Melbourne is the capital, claims to lead the way in public education with the best computer-to-student ratio in Australia (1:4.65). Notebook computers and Internet access are provided for all state schoolteachers at a rental cost of several hundred dollars per year. Three of the schools in our study eligible for this scheme reported that most staff have taken advantage of the offer. All four schools in the study share the policy priority of the improvement and extension of teaching with ICTs.

THE FOCUS OF THE RESEARCH

The study was prompted by an alliance between the Australian Council of Trade Unions (ACTU), a software company (Virtual Communities), and an Internet provider (Primus) to offer computers and Internet access to workers at affordable prices (Robinson & Barker, 1999). This alliance claims to represent a significant Australian initiative to 'redress the balance between the information rich and poor' by providing 'equal access to the World Wide Web' (Virtual Communities, 2002). We were interested in investigating if indeed access to ICTs at home 'makes a difference' for families previously excluded because of cost. The Virtual Communities project, and its historically unusual alliance between organisations as diverse as IBM and the ACTU, reinforces the point that ICTs are becoming increasingly pervasive and are widely regarded as a key element in social, economic and educational change (Castells 1996, 2001).

Given public advocacy for more and more computers and technology education, and growing home computer and Internet access in Australia (ABS, 2002), the study commenced with the broad question: 'What influence does the introduction of ICTs into low socio-economic households have on the families and the literacy learning of students?' A major aim was to provide teachers with understanding of how young people from low socioeconomic backgrounds use ICTs outside school so that they can build upon these practices in their approaches in the classroom. We were particularly interested in identifying the following: the computer-mediated literacy practices evident in home and school settings; the relationships between home and school computer-mediated literacy practices; patterns of interaction around computer-mediated literacy events in home and school settings, where an 'event' is an activity in which computer-mediated literacy practices have a role (see Barton & Hamilton, 1998); and the communicative resources available in the home setting and how these map onto the computer-mediated literacy practices available in schools.

METHODOLOGY

We conducted case studies of four families (three who gained computer and Internet access for the first time under the Virtual Communities scheme, and one that had had access for five years for comparison purposes). As it turned out, only two of the four families could be described as 'disadvantaged'. However, the nuanced similarities and differences, indeed, the diversity between the four families, represented in the variety of trajectories occupied by the individual members, provided us with rich sources of data to draw upon in our analysis and interpretation.

We visited the homes of the participating families six times between mid-2000 and mid-2001 to observe and interview the family members as they used ICTs. The researchers also visited the schools the students attended at least three times to observe them in the classes in which ICTs were being used and to interview their teachers and other members of the school community about the use of ICTs in the curriculum. We spoke to principals, to teachers in charge of Information Technology, to English teachers, as well as to Curriculum Coordinators. We collected some artefacts volunteered to us by participants, such as

electronic texts they produced and examples of email exchanges. We also examined school technology policy documents.

We organised the data so that we could systematically juxtapose literacy events across families and the schools the children attended, as the basis for our analysis. After experimenting with a variety of different forms of presentation, we chose the device of narrative fragments. These fragments are selective in relation to points of comparison and contrast between the four families. Even if assembled, the stories in each case are not exhaustive but focused around themes that are picked up within and between families and the schools the children attend. This allowed us to do some conceptual development work and to generate theoretical descriptions (Ball, Maguire & Macrae, 2000).

Our relationships to the families evolved over time. The three of us are middleclass Australians studying families for at least two of which the category of low socioeconomic class is consistently enacted in many if not all dimensions of their lives. Conscious of the knotty ethical and rhetorical dilemmas in writing about poor and working-class informants, we worried about the contemporary role of qualitative social researchers, particularly at a time 'when the leverage of and audience for progressive social researchers and policy makers has grown foggy, and weak in the knees' (Fine & Weis, 1996, p. 251). Gradually, however, we gained the trust of the members of the families and we report our findings with a desire to create a conversation about literacy learning and disadvantage in the context of access to ICTs.

THE FAMILIES

The lives of the families described here are shaped in the relationship between structural and material limits and possibilities and various individual factors, that is, their different opportunities are in part self-made, but are also framed by the continuing importance of class, ethnicity and gender inequalities (Ball et al, 2000).

Surviving on welfare

The Brown family, Jenny 33 and her two children, Brad 14 and Lizzie 12, live in a modest three-bedroom brick-veneer council house on a major road in Greenacres. The front garden of the Brown family's house has no trees, shrubs or flowerbeds - just grass. The family has lived there since Jenny's husband walked out six weeks after Lizzie was born. Until a year ago, Jenny had a live-in de facto, John. That relationship lasted several years and John, whom the kids refer to as their Dad, still drops in. Brad and Lizzie attend Greenacres Secondary School: Lizzie was in Year 7 and Brad in Year 9.

Jenny is slim, most often dressed in black, tight-fitting clothes, which she gets from local opportunity shops. She grew up in an inner-city working-class suburb and went to a local Catholic girls' school. Apart from a short stint as a casual sales assistant before she married, Jenny has never had a job nor training of any sort. The three of them get by on her single-parent pension. Her father, a retired member of the Vehicle Builders' Union, took advantage of the Virtual Communities deal to lease a computer package for himself and one for Jenny and the children. Jenny says the computer has changed their lives.

Upwardly mobile but temporarily derailed

The Lawfords are no longer a 'family' as such: Helen and Brendan separated in mid-2000. Helen works for a multinational power and resources company. Brendan is a Communications Officer for the State Secretary of a union. Helen lives in the family home, a modest double-fronted weatherboard 'worker's cottage' in the inner-western suburb of Rosewood. The halt to the renovations is a casualty of the break-up. Their six-year-old daughter, Angela, lives mainly with Helen (and the computer) and stays overnight with her

father in his flat about 200 metres away on two consecutive weeknights. Angela was in Grade 1 at Rosewood Primary School.

By any standards, Helen is a successful woman. A corporate high flyer, she has made a rapid ascent from working-class origins. Few of the young people who attended schools like hers completed their secondary schooling; fewer went on to higher education. Against the odds, Helen did both. Student politics brought Helen and Brendan together and paved the way for Helen to move into public sector administration under a Labor State government. Brendan implied that their relationship deteriorated when Helen moved to the private sector, thereby 'betraying' the values to which he says he's remained loyal.

New immigrants ambitious for their daughters' future

The Rodriguez family arrived in Australia in 1988 as political refugees from Chile. Fernando, a Metal Worker, works in an automobile parts factory, and his wife, Luisa, works in a creche. Their daughter, Carmen 11, attends St Cecilia's Catholic Primary School in a satellite city of Melbourne, 30 kilometres from the CBD, and Lydia, 5, goes to a local kindergarten. The family lives in a three-bedroom, ten-year-old house on a housing estate, in a suburb called Blue Hills.

The family speaks Spanish at home. Fernando did not complete secondary school in Chile and has limited English. By contrast, Luisa attended Migrant English classes when they arrived and TAFE (Tertiary and Further Education) studies in childcare. Both Carmen and Lydia are bilingual. The school they go to is not the closest but chosen by their parents because Luisa's sister's children had gone there. Luisa tells us that the girls will go to a Catholic Girls' Secondary College rather than the local public school because 'it offers the best program and standards'. According to Luisa, they have made many sacrifices: they want their children to have greater opportunities in life than they have had.

Ensuring the persistence of cultural cachet

Ray Lake, 43, who has a BA and two Grad Dips and Sara Lake, 39, who has a BA and a Law degree, are both trade union officials. Their two daughters, Felicity, 15, and Sally, 13, attend College High School - once an elite public school but now open to all, except for an accelerated program for the very able which has competitive entry. They are in Years 11 and 9 respectively and both play musical instruments. The family lives in a comfortably furnished, three-bedroom house that is full of books in the inner-city suburb of Kilvington.

The most striking aspect of the Lake house - particularly in the context of a research project focusing on computer use - is the abundance of books. The Encyclopedia Britannica occupies a shelf in the living room, while the computer is located in the back room. When the focus of the interview was on computer use, all four members of the family were careful to assert the essential superiority of books as the source of knowledge and values to anything available online. This is a family that reveres book culture yet its members were also the most skilled users of computer technology.

USING THE HOME COMPUTER

For the kids or for Mum?

Jenny's reasons for wanting the computer package were a little different to those of her father who paid for it. He said that he hoped to give his grandchildren another source of entertainment besides the TV. He also thought Jenny might improve her chances of employment if she got some computer skills. By contrast, Jenny was interested in the

potential educational benefits for her children: 'Cos I knew that they were using them at school and, I mean, they're the future and they're gonna take over everywhere.'

Although Jenny 'didn't even know how to switch one on until we got it', she has turned out to be the main user of the computer in the family: she has become addicted to chat. An analysis of Jenny's intense interactions, which have many of the qualities of a soap opera, provides the focus of another publication (Angus, Snyder & Sutherland-Smith, in-press).

Brad is more interested in using the Internet to pursue his hobby of racing cars. He moves between the TV with its Play Station and the computer where he often downloads music or creates his own bizarre cars using elements from a range of models. He's the family's trouble-shooter and teacher. He showed Jenny and Lizzie how to create folders to save potential avatars (icons that represent individuals in virtual contexts) for use in the chat rooms. He works out how to do things as the need arises.

More like her Mum, Lizzie can spend up to four hours chatting in text-based exchanges with people - extended writing that she wouldn't contemplate at school: 'It's different. It's exciting on the computer. With pen, it gets hard to hold it after a while.' But she told us that chat can get very nasty, in fact, so venomous and crude that we have not included the email exchange between Lizzie and someone she met in a chat room. Neither Brad nor Lizzie use the computer for school work.

Although they each enjoy independent computer activities, there are also regular times when the three of them sit around the computer together, usually at a chat site. There are some books in the house: Lizzie has 66 volumes of the 'Baby-sitters' series and enjoys reading Danielle Steele novels once her mother has finished with them.

Adding to the household's resources

As Helen Lawford spends most of her time at work on the Internet and has her own laptop to use at home, Angela has almost exclusive use of the computer. A bright, confident and articulate six-year-old, she is very proud of her computer skills and was always keen to show them off to us. The computer has displaced the TV as her main source of recreation: sometimes with her mother beside her, sometimes alone. She uses it to play her CDs; Barbie.com is her favourite website.

When she invited her friends to come to a sleep-over, she printed out the invitation and mailed it. Brendan wants Angela to continue with her creative pursuits as part of his broad aspirations for her. He thinks that the computer will be used 'to do her work - whether study or as a resource to gather things, or to organise social aspects of her life'. Both Helen and Brendan stress that Angela is also an 'avid reader'. They both want to strike a balance between reading and computer use for their daughter.

Angela uses the computer, the modem and directories with confidence and skill. But although the value of play was endorsed by both parents, Angela didn't simply acquire this confidence haphazardly: Brendan and Helen deliberately selected Angela's first computer game, *My Very First Software*. As Brendan explained: 'I knew that the school ... had computer studies and having some sort of basic click and drag search ability to start with means she's at a level that she's not going to be behind as soon as they sit down at the screen'.

Monitoring computer use at home

Like the Brown family, the Rodriguez's computer is located in the living room along with the TV, the Nintendo and the typewriter. But unlike the Browns, the Rodriguez family never sits around the computer together. Fernando uses it occasionally for email to family and friends in Chile and to read newspapers in Spanish. Luisa prepared essays for her studies on the computer and now uses it to mock-up notices for work. Both Fernando and Luisa, acutely aware of the sites they don't want their daughters to visit, prefer that the computer be used for educational purposes. The girls are allowed access only on weekends unless Carmen requires it to complete a school assignment. On the weekend, Carmen plays computer games. When she shows us what she can do with the computer, she moves from program to program with confidence and advanced skills. Luisa is concerned about improving her own computer knowledge. She says: 'I am the mother. I must know more than her'.

Playing 'Civilisation'

Civilisation is a computer game that Felicity and Sally Lake enjoy immensely, particularly when their parents join in. Felicity describes it as 'fun because you have to invent things ... I like the building and starting a civilisation'. In some ways, it seemed that the Lake family not only plays *Civilisation* on the computer, but also a version of it in real life. Family members associate the game with the learning of history, culture and literature, in which they are interested. Yet all of them, even Sally, speak about their computer skills in a deprecatory way (Ray: 'I'm never sure where to put the petrol in') and play down their obvious competence. They would rather talk about music and literature.

The liberal values endorsed by the parents are carefully packaged and passed on to their girls. All four members of the Lake family commend the virtues of book culture and all that it represents to them. They see the computer as a tool that has useful functions and facilities for them to exploit. Ray and Sara bought the computer so that they could do some of their work at home and thereby leave the office earlier. There is no real competition for the computer: certain activities and needs are prioritised. The hierarchy is: work, homework, general Internet searches and then games. Noone uses chat programs but everyone emails the Adelaide grandmother who is 'an email addict'. There seems to be an easy connection between the sophisticated computer work required at school and the ways in which Felicity and Sally use one at home.

USING THE COMPUTERS AT SCHOOL

Learning how to MailMerge

At Greenacres Secondary College, we were hard-pressed to find anyone with a high opinion of either Brad or Lizzie Brown. Lizzie was in Year 7 and seems hardly to have been noticed by teachers, whereas Brad was very well known. According to one teacher: 'He's the kind of boy every teacher knows', who had been 'kept down' at the end of year 7. The general view among teachers was that Brad had given up.

Apparently, 'there are a lot of Brads' at the school. In the words of his English teacher, they get 'a lot of strugglers. A lot of families that put education well down their list of priorities'. Even this teacher, whom Brad thought knew him best, expressed little knowledge of Brad's family: 'They're basically working class stock. Apart from that I really don't know.'

Brad was contemptuous of the school's computer education program: 'I fought you go on the Internet [but] we weren't allowed on the Internet at all for the whole class.' He tells us: 'I

didn't learn nuthin' at school from the computer. I already knew ... I had Info Tech classes and I gotta admit I learnt somethin' but I've never used it - MailMerge'.

Life is not easy for Lizzie at school either. When asked what she does in computer classes at school, she replied: 'In maths we have fun because we do *Maths Circus*. But sometimes we have to just write out all these sums on the computer ... Most of the classes are OK, but what I'd like is for them just to stop tellin' me off.'

At school, Brad is widely perceived as having poor literacy skills. At home, however, Brad reads 'car books': 'they're real, all the info on that exact car are real'. When his uncle gives him a car magazine, he reads 'every article ... about ten times'. Not surprisingly, Brad was keen to leave school as soon as he was 15: 'I just hate everyfin about school ... [but] I don't want be a dole bludger! My parents don't reckon I'll do it that easy, so I want to prove to them that I can'. In mid-2000, he was thinking about spray painting and early in 2001, he secured an apprenticeship in a small local spray shop. Noone was going to make him go back to school; he would prove to everyone that he *could* get a job.

Laying strong foundations

As Angela Lawford was only in Grade 1, at a school which did not prioritise the development of computer skills at such an early age, we are unable to comment on her use of computers at school. However, unlike Lizzie and Brad's teachers, Angela's know her parents, particularly Helen, quite well. The Assistant Principal and the Computers Coordinator also know Helen, describing her as 'pretty dynamic' and 'confident'. Kate Steiner, who has taught Angela for two years (Prep and Grade 1), recalls that Angela received support from the extended family for special school events and that there was a strong level of engagement in her schoolwork from her mother. She's seen widely as 'bright, cheerful, always willing, and always courteous and always wanting to help the other children ... the perfect student, the ideal child'.

Trying to integrate computers into the curriculum

Using computers across the curriculum is high on the agenda at St Cecilia's, which has just over 300 students, representing 58 ethnic groups, 11 fulltime teachers and a few parttime. There is one computer lab and each classroom has six computers. The computers are all shared and as Carmen's teacher says: 'It's all very cooperative.' There's an Intranet and access to the Internet via the library. A computer consultant, Tom, comes to the school once a week and works with groups of students and teachers. The teachers develop units of work with Tom then implement them in the classroom. Carmen's teacher feels confident using ICTs in her classroom remarking that she learned pretty fast. She explains that her own children are computer literate and that 'you learn so much off the younger ones ... It's a two-way street. It's sort of a never-ending story - you're always learning'.

Carmen develops webpages in class and also uses PowerPoint for project presentations. She loves to use the computer and sees it as an integral part of her classroom experience. Carmen gets into the computer lab only twice a week in scheduled classes, but sometimes she also goes at lunchtime. When she finds information for a project, she always writes it in her own words as her teacher will not accept material simply cut and pasted from a website. Carmen's confidence with computers is constantly reinforced by her teachers.

Computers as part of professional practice

College High has one computer lab in the library with about 20 computers and about 10 classrooms with computers around the walls. The students are never required to complete

work at home on computers as the school is sensitive to the fact that at least 33 per cent of the school population live in Housing Commission homes located close to the school and don't own computers. Both Felicity and Sally use computers at school in a number of ways - for Internet searches, word processing and presentation. Although Felicity has used computers since she was just two-years old, and recalls a favourite primary school teacher who showed the students something new to do with computers each Friday, she admits that she prefers using books for research. Felicity says that she's 'afraid of breaking the computer, of making it crash'. By contrast, Sally enjoys games, emailing friends, searching the Internet for projects but also considers the book version of Britannica more reliable and easier to use than trying to isolate the appropriate key word for an effective search.

LINKING HOME AND SCHOOL COMPUTER-MEDIATED LITERACY PRACTICES

In this section, the analysis begins by illustrating the dissonance between the computer-mediated literacy practices observed in the Brown home, and those prescribed at school. We saw various iterations of something closer to complementarity between what took place at home and in the children's schools in the educationally motivated Rodriguez family, the upwardly mobile Lawford family, and the resolutely middleclass - at least in terms of social, economic and cultural capital if not politics - Lake family. More attention is given to the members of the Brown family as their experience is the most illuminating in terms of the study's focus.

As already mentioned, Jenny believed that Brad and Lizzie would be advantaged at school by having a home computer. In particular, she thought the computer would 'help them look up things'. However, although aware that the computer had the latest versions of Encarta, Britannica and World Book as part of the Virtual Communities package, neither Brad nor Lizzie reported using them for schoolwork. As far as we could tell, the educational use of the computer in the home was minimal. Jenny has accepted the societal view that computers at home are good for children's education and give them a competitive advantage (a point hammered home in Virtual Communities' television advertising during programs such as football telecasts), but does not have the educational resources herself to help them much. Besides managing the programs and trouble-shooting, most of Brad's time on the computer was spent downloading music and searching for car information and images, while Lizzie was occupied with chat, celebrity news, magazine and fan sites, and VirtualDog.com.

Jenny has acquired her own computer competence, but boosts Brad as the 'family expert' who knows how to get rid of a virus. By contrast, at school Brad is consistently perceived as a 'loser'. That Brad and Lizzie, for that matter, might have some acumen with computers is not even considered. When Mr Hall was told that Brad had Internet access at home, he had low expectations about the sorts of activities he might be indulging in:

I'm sure, I'm certain that most of the time he's on the computer he's searching the Net; it's for pleasure not for anything educational ... You know the sites that ... Brad's heavily into - skateboarding for instance ... As a teacher I have a computer at home for my kids. When my kids use the computer I like to oversee it and see exactly what they're doing. But who knows what Brad is doing!

In fact, Jenny had quite a sustained, if casual, interest in what her children were doing on the computer, and often members of the family knew what the others were getting up to. Unless Brad was listening to music in his room, all three were usually in the lounge watching TV and/or using the computer, often looking over the shoulder of the person at the keyboard and discussing the chat. It seems that Jenny reserved her more intimate exchanges for late at night and during the school day.

On the other hand, as already suggested, even to the 12-year-old Lizzie, the chat room can be a pretty raunchy, if not abusive, environment. In one 20-minute session when Jenny, Brad and Lizzie showed one of us how to manipulate the chat environment, the avatars of others online who 'approached' them to 'whisper' (one-to-one chat) were named: 'Aussie 69', 'Hunky Girl', 'Big Boy', 'James Bond', 'Brice', 'Lori', 'A1Dude' and 'Remington Steele'. Lizzie spent a lot of time thinking about her avatar, 'Chickbabe': '[In my avatar] you can have a photo or little picture like of a cartoon, or not a cartoon character, but you can have a little girl with a hat on with blonde hair and blue eyes or something, and just jeans.'

As already indicated, there is not much to say about the connections between home and school computer activities for Angela, who is only six-years old, except to predict with reasonable confidence that both parents will continue to take a strong interest in all her school work and will increasingly encourage the use of the computer at home for educational purposes.

In the Rodriguez family, the ways in which the computer is used is controlled and scrutinised. The school Fernando and Luisa have chosen for their girls, for which they struggle to pay the fees, is in the process of making sure that the use of computers is integral to the curriculum. This is being achieved with the assistance of the consultant who is driving the teachers' professional development. Luisa expects the school to perform and deliver a good education to her daughters. She dislikes some of the principal's ideas but does not wish to approach anyone. Because of their distance from the school, the girls are not able to interact with school friends beyond school hours and Luisa and Fernando are not part of any school social network.

There is no tension between the approach to computers adopted at College High and the dominant attitude shared by all members of the Lake family: the educational importance of computer technologies is recognised but computers 'have their place'; they must not be assigned too much cultural significance. The Lake family and the school concur, although perhaps not explicitly, that book culture provides the foundation for contemporary society. For the Lakes, the computer is a powerful tool which they want their daughters to be able to use competently - and the school that they have chosen is achieving their aims.

DISCUSSION

Our comparison suggests that the 'socialisation' of the technology - its appropriation into existing family norms, values and lifestyles - varied from family to family. As the Lake girls are from a more economically advantaged environment, with appropriate cultural resources, they are better placed to exploit the benefits of having a computer at home; their learning experiences at home are equipping them with the literacies to participate in the technologically rich world of the future. For the Lake family, the use of ICTs is casually and almost effortlessly incorporated into their already-existing base of cultural capital. Even young Angela Lawford already has a huge lead over Lizzie and Brad Brown in the cultural capital stakes. The Rodriguez girls are also quite well positioned to acquire the literacies of power (Gee, 1996) mainly because their parents place such a high premium on the importance of education in the achievement of social advantage. However, we wondered whether Brad and Lizzie, even though they have home access, would develop similar skills and strategies for learning with ICTs as they certainly weren't provided with the opportunities to acquire them at school.

These are some of the cultural and material realities at play in the case studies presented in this article. But there are more. For example, the relationship of the Lawford family to the school contrasts with that of the Brown family. Despite their similar origins, Helen Lawford is a very different person from Jenny Brown. Helen is well connected to the school and local

social networks of similarly minded people (middle class, Labor-voting, mainly tertiary-educated etc). Jenny is isolated in the home that she rarely leaves. There has been a major change in her life, directly linked to the arrival of the computer, but the new relationships formed in chat rooms are virtual and at this stage do not offer her any social advantage, just escapism and entertainment.

Perhaps if there hadn't been a disjunction between the sorts of learning opportunities afforded by new technologies when used at home as compared with school, Brad and Lizzie would have been less frustrated with their experiences at school (Furlong, Furlong, Facer & Sutherland, 2000). Their disappointment was caused largely because something they enjoyed at home was a drag at school: the use of ICTs was incorporated into the typical practices of school life that they regarded as boring. Despite the hype and rhetoric of empowerment, agency and the like (Snyder, 1998b, 1999), the use of ICTs at Greenacres Secondary School is being 'sucked into the pattern of teacher control and student passivity' that Furlong et al see as the 'typical conditions of learning' in schools (2000, p. 103).

Overall, compared with the Lawford and Lake children, and also with the Rodriguez girls, Brad and Lizzie Brown have experienced greater inequalities of access to resources and life chances, making the reproduction of disadvantage more likely. Yes, they have a computer and Internet access in their home, making them part of that rapidly expanding group, at least in Australia, of the technology 'haves', but that's where the similarities with the other children in the study more or less begin and end. We need to ask, therefore, how useful it is to talk about the technology 'haves' and 'have nots'.

As suggested by the analysis of the book cover at the beginning of this article, material markers of disadvantage may not be clear signifiers of socioeconomic difference. In the current study, although access to technology was available to all the participants, both at home and at school, this fact alone was not enough to enhance young people's literacy achievement at school. Indeed, in at least one instance, teachers at the school were unaware that the young people had a computer at home and that they were engaging in quite sophisticated literacy activities on a regular basis outside of the classroom.

Our findings suggest that we require an expanded reconceptualised understanding of 'access' and its relation to equity. Access cannot be seen merely as a matter of having a way to use computers and a connection to the Internet. 'Access' needs to be rethought as a much more complex and multileveled social goal. Burbules and Callister (2000) distinguish between 'quality of access' and 'quantity of access' and also between 'conditions of access' and 'criteria of access'. Considerations of *how much* need to be counter-balanced by considerations of *how good*. This view is consistent with Connell's (1993, p. 16) account of 'distributive justice': in relation to access to technology, it is about not only who gets how much of the technology resources, but also who gets the benefits associated with such resources and how much of them (Comber & Green, 1999).

Overall, the contrasts we observed between the young people's use of ICTs in home and in school settings were illuminating about the connection between literacy learning, the use of ICTs and disadvantage. We are seeing shifts in the meaning of 'disadvantage' in a globalised world mediated by the use of new technologies. New definitions of disadvantage that take account not only of access to the new technologies but also include calibrated understandings of what constitutes the access are required.

To conclude, we suggest that two questions could be asked about our presentation and analysis. First, are these just old 'class stories'? What has changed? We hope that our account of the rapidly changing educational environment, in which the imperative to be competent with the new technologies is integral to school and post-school success, is an

adequate response to that. At the same time, old inequalities have not disappeared but neither are they the same. As already discussed, all the families had home access to the Internet, so in the parlance, they are all part of that expanding group, the technology 'haves'. But when compared to the other three families, the Browns were simply not as well off. Second, does the presentation of narrative fragments work? Our response is that we are attempting to capture and illustrate the complexity of contemporary educational inequalities within and across the lives of young people and their families. Differences and inequalities are multifaceted and are played out and develop over time. The narrative fragments are a device for analysing and presenting this.

In telling the stories of these four families and the children in them, we run the risk of drawing primary attention to individual rather than to social differences. This may work to disguise some of the older continuities of (dis)advantage as signalled by the class backgrounds of the four families. The families all live in socioeconomically contrasting parts of Melbourne and the relationship between opportunity and education is different in each case. We looked at the connections between the use of ICTs and existing patterns of social, economic and cultural (dis)advantage. These are not just questions about physical access to the best and most expensive technology (or to any at all), which is largely a matter of income, but also about the quality and nature of such access as mediated by the cultural resources that individuals and families can bring to bear on their *relationship* with technology. These questions about the nature and quality of access will inform the next stage of the research.

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