BEING DIGITAL
in School, Home and Community

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Executive Summary

This report presents the findings from a survey conducted in 2006 of Australian Year 10 students’ digital literacy practices. The survey was part of the Being Digital project funded by the Australian Research Council. The main purpose of the survey was to provide a comprehensive account of young people’s engagement with digital technologies in the various dimensions of their lives and to consider the implications for school education. The survey also set out to map the cultural forms associated with young people’s use of digital technologies and to consider the extent to which these cultural forms are being transformed (see Williams[1]).

Being digital at home

Most young people have home computers with internet access

Most young people had lived in homes with computers since primary school and most had more recently acquired access to the internet. Young people in the lower SES quintiles were more likely to have acquired their computers and internet access later in their schooling than those in higher SES quintiles. Young people from the private school sector were more likely to have had a home computer and internet access for longer than those in government or Catholic schools. Despite some small remaining differences across SES brackets, home computers and internet access are reaching saturation. A similar pattern was evident for other digital technologies where ownership has penetrated all sections of the community. Lower levels of ownership of certain technologies such as computer/video games and office technologies reflect different levels of interest rather than barriers based on cost. These findings are in line with those from other reports[2,3].

Computers and internet access are important for young people’s schooling

Ownership of digital technologies, specifically of computers and internet access, appeared to be higher for families with school-age children. The sample of young people who completed the questionnaire in 2006 when they were in Year 10 revealed higher rates of technology ownership than 2007 ABS data sampling across all households and all age groups[3,4].

The majority of young people’s homes in 2006 had only one computer and this was most often located in a shared space. The most common location for a second computer was in a young person’s bedroom. These data, coupled with the increased home ownership of computers for households with school-age children[3,4], suggest that a key factor motivating the purchase of home computers is the perception that computers and internet access are necessary technologies for children’s education.

Young people use computers daily to surf the web, email and chat

Most of the young people used their computers almost every day, and more than half spent at least an hour per school day, with a quarter spending more than three hours per school day. This aligns with ABS data on computer usage by 15-17 year-olds[4]. The young people tended to spend longer on the computer on the weekend, with more boys than girls spending in excess of five hours per weekend day.
Young people engaged in a broad range of internet activities at home, with surfing the web, communicating using chat or email and listening to music the most widespread activities. Boys were more likely to spend time playing online games or downloading resources, whereas girls were more likely to spend time communicating with others or doing schoolwork.

Young people have music players in their bedrooms
Young people had digital technologies in their bedrooms, with the majority having music players and more than half televisions. Around 40 per cent of young people had computers in their bedrooms but fewer than 30 per cent had internet access. Not surprisingly, digital technologies in the bedroom were more likely to be used for solo activities. With the exception of television, they were also more likely to be used with friends.

Young people watch television every day, often while multi-tasking
Television ownership was universal and, consistent with ABS data\(^4,5\), most young people watched television for at least an hour every day. A quarter of males, but only half as many females, watched television without engaging in another simultaneous activity. The most popular activity for females while watching television was to text or talk on a mobile phone. Almost half of all young people simultaneously used the computer and watched television, suggesting that television is part of the background environment for young people while completing their homework and other activities or that young people switch their attention between several technologies rather than focusing on just one. Young people tended to watch television for longer periods of time on weekend days than on school days. Young people with cable television in their bedrooms were more likely to watch television for more than five hours per day. ABS data\(^5\) show that hours spent watching television remains consistent for young people from five to 14-years-old.

Being digital at school

Private school students have better access to computers at school
Only half of the young people at government and Catholic schools were happy with the number of computers at their school, whereas most young people at private schools were happy with the number. Almost half of young people in private schools had their own laptops and most brought them to school. By contrast, of the one-third of government and Catholic school young people with their own laptops, very few brought them to school. While most students used school computers at least weekly, students from private schools were more likely to use computers daily and they were most likely to use their own laptops while at school. Computers at school were mostly used for school work, with less than 10 per cent of reported usage for non-school activities. By contrast, home computers were predominantly used for communication and entertainment.

Young people learn about the internet mainly by themselves
The majority of young people learnt about the internet by themselves or from friends. More than 10 per cent said they didn’t learn anything about the internet at school.
These data suggest that schools could be doing a better job in teaching students about the internet or, alternatively, that by the time young people begin using the internet at school, they have already learnt about it elsewhere.

**Rules on internet usage are perceived to interfere with schoolwork**
The majority of students across school sectors found that rules on internet usage interfered with their ability to use school computers for their school work. Much of the interference related to the blocking of access to internet sites. Many of the schools surveyed limited access to email and chat programs (eg, Hotmail and MSN messenger) thereby restricting the ability of students to communicate with each other online and to send schoolwork from school computers to their home computers using their preferred email accounts.

**There is little evidence of innovative use of digital technologies in schools**
Although students used school computers for finding information, for word processing and for creating spreadsheets and databases, this survey did not find evidence of creative or innovative computer use transforming educational practice in schools as judged by the young people.

**Young people take mobile phones and music players to school**
Most young people owned digital technologies and three quarters of them took their mobile phones to school. More than half also took their music players. Girls and boys were equally likely to take their music players to school, whereas girls were more likely to take their mobile phones and boys more likely to take their portable gaming devices. However, overall very few young people took gaming devices to school.

**Communication and gaming**

**Girls use digital technologies for communication and boys play games**
Girls and boys were equally engaged by television, the internet and music players. The most striking difference between girls and boys was that girls were more likely to use communication technologies and boys more likely to play electronic games.

**Mobile phone users who text and talk also use chat and email**
The majority of young people used mobile phones, both at home and at school, and most young people used talk and text modes. Girls were more likely than boys to text their friends and talk to their families. Neither girls nor boys used only talk mode with friends at school, although some used only talk with their families. This is more likely to reflect the preferred communication channel of family members than the preferred mode for young people, who seemed happy to switch from talk to text depending on social circumstances and context of use. More girls than boys reported using chat and email every day. Mobile phone usage aligned with the use of chat such that young people used as many communication channels as were available to them.
Boys play games by themselves whereas girls play games with friends
Boys who played offline electronic games were also more likely to play online games, whereas fewer girls who played offline games also played online. There was a small subset of girls and boys who played online games in preference to offline games. Although more than half of the boys who played computer games only did so as a solo activity, the vast majority of girls also played games with friends as a social activity.

Technology that would be most missed
The technology that would be the most missed by young people was the internet, followed by mobile phones and then TV. It is worth noting that TV shows can be viewed via the internet and increasingly can be displayed on the screens of mobile phones. The versatility and portability of new digital technologies may account for the fact that TV as distinct from television content is less likely to be missed by young people.

Favourite type of entertainment
Young people are most interested in comedy, music and sport
Comedy, music and sport were the most popular forms of entertainment. Music and comedy were more popular among girls, whereas sport was more popular among boys.

Young people use a range of media to follow their favourite entertainment
The media selected by young people aligned with their media choices, as did the gender differences associated with media type. For example, girls prefered talking to friends and reading magazines while boys prefered playing computer games.
Project Objectives

This report presents the findings from a survey conducted as part of an Australian Research Council (ARC) funded study: Being digital in school, home and community: Investigating the implications of young people’s engagement with ICT for education. The overall aim of the research was to provide a comprehensive account of young people’s engagement with digital technologies and to consider the implications for school education. The focus was on the diffusion, uses, experiences and significance of new technologies in the everyday lives of Australian young people.

The research project asked what the term ‘literacy’ will mean in the next decade. What new kinds of literacy practices will characterise the students now entering Australian schools? What will be the form and content of the digital technologies they use? How will graduates communicate in the globally extended networks now integral to 21st century workplaces? To what extent are teachers prepared to work with such students and their new literacy practices in productive ways? How might current curricula and approaches to teaching and learning be modified to take into account the fact that students spend more time engaging with computer games and websites than they do reading the pages of printed books? How might schools change to meet the needs of students who make meaning not only with words, but also with digitised fragments of video, sound, photographs, graphics and animation?

As part of the larger study, which included 20 case studies of young people, we conducted a survey of Year 10 students in Australia to capture their use of digital technologies in everyday life. Our aim was to understand what being digital means to young people in the context of school, home and community. The survey set out to map the cultural forms associated with the use of digital technologies. A key objective was to provide a framework within which to examine the contemporary landscape of cultural forms and the ways in which they are being transformed by the use of new technologies (see Williams[1]).

The report provides a comprehensive, detailed account of young people’s engagement with digital technologies at a single point in time. This snapshot can be compared with other similar snapshots to help chart the trajectory of rapid technological change with the aim of understanding the impact of this change on young people’s digital literacy practices and the cultural forms through which they understand themselves and the society in which they live.
Key terms

Three terms are integral to the report:

**Digital technologies**

These include the diverse digital technologies available to young people such as computers, the internet, mobile phones, video games and DVDs. At the time of the survey, CD players and mp3 players/iPods were auditory media. But this is changing, with mp3 players incorporating higher resolution screens to accommodate the visual media associated with music and podcasts.

**Digital literacy practices**

Digital literacy practices are culturally and socially shaped ways of using, producing and understanding information in multiple formats from a range of sources when it is presented, often via the screens of digital technologies. Core digital literacy practices include internet searching, hypertextual navigation, content evaluation and knowledge assembly.

**Cultural forms**

Cultural forms are a general way used by the culture to represent human experience in the world. Cultural forms define the space in which social and cultural practices are enacted and constitute part of the means by which societies transmit communications and through which communications can be understood. Examples in the context of the internet include news, comedy and social networking websites.

The intersection between the three key terms

Although there is considerable knowledge about young people’s literacy practices when they use digital technologies, there is still much to learn about the complex connections between these practices and cultural forms. A central goal of the study was to enhance knowledge about the relationship between cultural forms and literacy practices in the context of the use of digital technologies.

Scope and Methodology

**Survey aims**

The first aim of the survey was to explore young people’s digital literary practices across three sites critical in their lives – school, home and community – to gain an understanding of their everyday digital literacy practices. The second aim was to identify, describe, classify and evaluate the principal cultural forms with which young people engage when they use digital technologies in their everyday lives.

**Demographics**

The survey was completed by 2,635 Year 10 students drawn from a probability sample stratified for state/territory and school sectors (government, Catholic, private). Demographic factors selected for analysis were school sector, gender, socioeconomic status (SES), geographic remoteness and cultural diversity. Year 10 students, who are
generally aged between 15 and 16, were chosen as representative of ‘young people’ as they are old enough to be designated as such but are not yet subject to the increased demands of the final two years of secondary schooling which might have limited participation in a survey.

SES was measured in terms of the Education and Occupation scale of the Socio-Economic Indexes For Areas (SEIFA), an index developed by the Australian Bureau of Statistics (ABS) to summarise socio-economic conditions of the Australian population based on location[6]. It should be noted that the SEIFA Educational and Occupational quintiles referred to in this report reflect the SES status of the area in which the student lived (identified by postcode), rather than the specific socio-economic circumstances of each individual student.

Geographic remoteness was measured in terms of the Accessibility/Remoteness Index of Australia (ARIA)[7], which is derived from measures of accessibility to service centres based on road distances. ARIA values are grouped into five categories: Highly Accessible, Accessible, Moderately Accessible, Remote and Very Remote[7]. Moderately Accessible areas are characterised by significantly restricted accessibility of goods, services and opportunities for interaction compared with major cities. As the sample was representative of the total population, there are too few students in our survey from Remote and Very Remote regions to be able to make definite claims about the data gathered. We can therefore only make limited comment on the degree of penetration of digital technologies to young people in remote areas and on the degree to which different digital technologies are being used by young people to overcome barriers of distance.

The cultural diversity of the sample was achieved by including students from non-English-speaking backgrounds and by ensuring representation of Aboriginal and Torres Strait Islanders. Cultural diversity was examined only in so far as to ensure that the survey sampled young people from a range of cultural backgrounds, but was not analysed separately for this report.

In our sample, students in the private school sector were more likely to be in higher SES brackets and in more accessible locations geographically. Conversely, students in lower SES brackets and those in areas further from major cities were more likely to attend government sector schools. Because the focus of the study was on digital literacy practices across the three sites of school, home and community, we acknowledged the relationships between school sector, SES and remoteness/accessibility, and focused our analyses primarily on school sector and gender as the demographic factors of particular interest.

Questionnaire

The web-based survey was accessed via a password-protected link on the project website to ensure that only those young people at the schools surveyed completed the questionnaire.

The questionnaire began by identifying the digital technologies located in students’ homes, establishing where they were situated, how often they were used, what activities they mediated, when they were used, and how their usage was monitored. The questionnaire then explored computer usage at school, identifying when computers were introduced, how often they were used, where they were located, what
they were used for, and how their usage was regulated. The use of other personal
digital technologies at school was also explored. The questionnaire went on to
consider activities undertaken in the community – beyond school and home – to
explore the extent to which digital technologies are influencing social and cultural
practices, and leisure-time activities. The questionnaire concluded with the collection
of demographic data which might influence the ability to engage in the use of digital
technologies, in other words, issues of access and equity.

Being Digital at Home

Digital technologies in the home
This and other surveys\(^{[2,3,8]}\) include a wide range of digital technologies and media
when considering the notion of ’being digital’. The focus in this survey was on digital
activities and practices rather than ownership of different technologies per se,
however, ownership of technologies may still have been a critical factor in the ability
to engage in digital literacy practices.

Young people from higher SES homes acquired computers earlier
than those from lower SES homes

![Figure 1 Stage of schooling during which first home computer was acquired for students in each SES quintile](image)

While most young people surveyed (77.5\%) reported first having a computer at home
during primary school, if not before, fewer students in the lower SES quintiles
acquired home computers prior to primary school, and slightly more (lowest 6.2\% vs
highest 1.1\%) first acquired a home computer in Year 10 (the year level of the
survey).
Students at private schools acquired home computers earlier than those from government and Catholic schools

Figure 2 Stage of schooling during which first home computer was acquired for students in each school sector

The difference in time of acquisition of a first home computer was also reflected across school sector, with more government school students acquiring home computers later in their schooling, and with more private school students having home computers before starting school.

Young people from highly accessible areas acquired computers earlier than those from less accessible areas

Figure 3 Stage of schooling during which first home computer was acquired for young people as a function of accessibility/remoteness
Young people in moderately accessible areas were less likely to have acquired a home computer before starting primary school than those from more accessible areas. Nevertheless, most young people (more than 70%) had a computer at home by the time they completed their primary school years.

Access to the internet

Most students have home access to the internet

![Bar chart showing percentage of students with home computers and internet access as a function of SES within each school sector.](image)

Figure 4 Percentage of students with home computers and home internet access as a function of SES within each school sector

At the time of the survey (2006), nearly all students (98.4%) had computers in their homes, and most (93.4%) also had an internet connection (dial-up 24.6%, broadband 72.1%). There were still small differences in access to computers and internet across SES and school sector, with those in the lowest SES in the government school sector least likely to have computers or internet access.
Homes from higher SES quintiles are more likely to have broadband than those from lower quintiles

Figure 5 Broadband versus dial-up across SES quintiles

Young people from private schools are more likely to have broadband in their homes than those from government and Catholic schools

Figure 6 Broadband versus dial-up across school sector
Young people in cities are more likely to have broadband than those from less accessible areas

![Figure 7 Broadband versus dial-up as a function of ARIA](image)

As with first acquisition of home computers, fewer students from lower SES brackets and from the government and Catholic school sectors had broadband internet connections, reinforcing the finding that earlier access to the latest digital technologies tends to be the privilege of students in the private school sector. It is unclear to what extent broadband penetration to more remote areas is a result of lack of infrastructure or other factors (e.g., competing activities, lack of interest) as our survey did not ask about infrastructure provisions. The data reported here are consistent with ABS data[^4] which show lower rates of computer ownership and internet access for households characterised by no children under the age of 15, being located in a regional or remote area or having a low income.

Given the almost universal ownership of computers and internet access in our sample, it may be that the advantage to private school students reflects the attitudes to education and technology of families in different school sectors rather than being a result of economic disadvantage. This is supported by the 2008 CCi Digital Futures Report on The Internet in Australia[^8]. Although the report confirms that there is lower internet usage amongst adults with lower incomes and lower educational levels, the CCi report found that 38.8 per cent of those without internet access cited lack of interest as their main driver, whereas only two per cent cited expense as the major constraint.
Digital technologies

Most young people have computers, TVs, phones and internet access

Figure 8 Percentage of students who have access to key digital technologies at home

The data in Figure 8 suggest that ownership of the key digital technologies (computer/internet, TV and phone) is almost universal. The acquisition of a home computer has sometimes been used as an indicator of a household entering the digital age, marking acquisition of independent capability for participation in computer-based digital activities. Only a very small percentage of students in the highest SES bracket (1.8%) did not have internet access, while students in the lowest SES bracket at government schools (15%) were least likely to have internet access at home (see Figure 4). With almost universal ownership of home computers for households with school-age children found in this and other recent surveys\textsuperscript{[2,4,8]}, ownership of personal, portable digital devices and ready access to the internet may now be the more appropriate baseline indicators of capacity to engage in digital literacy practices.
Young people from lower SES homes have fewer digital devices than those from higher SES homes

Figure 9 Percentage of young people in each SES category who own digital technology items

Most young people own at least 10 digital devices, but young people in the lower SES brackets are more likely to have fewer devices. Despite these inequalities in ownership, more than 80 per cent of all students reported owning technology allowing them the capability to engage in a broad range of digital activities. From these data, it can be inferred that the most likely remaining differences in access to digital technologies relate to the quality and specialisation of digital technologies rather than to ownership of digital capability *per se*. For example, someone who owns a mobile phone with an inbuilt camera and mp3 player has three digital capabilities in the one device, but does not necessarily have as much functionality in each of the three technologies as someone who owns a mobile phone, a digital SLR camera and an iPod. Young people in higher SES brackets with more digital devices are likely to have access to more specialised digital capabilities than those in lower SES brackets with fewer devices.

Only 50 per cent of students reported having devices described as ‘office’ technologies (fax machine, digital organiser, scanner, pager). However, ownership of these technologies is more likely to reflect the requirements of adults in the household rather than relating directly to the educational or recreational needs of Year 10 students.
Some young people live in homes with more than one computer

Around 63 per cent of homes have one computer and fewer than three per cent of homes have more than three computers. The most common location for home computers is in a shared area such as a study or family living area (79%).

Home computers are located in shared spaces and bedrooms

Figure 11 Location of up to three computers in a household. The blue bars represent the distribution of computer locations in homes with only one computer. Additional locations of computers have been stacked according to frequency.
Although more households have computers in family/living areas than in young people’s bedrooms, the most common location for a second computer in two-computer families is in a young person’s bedroom (38.5%). This suggests that a major motivating factor in the purchase of a home computer is to ensure that young people have access to a computer for schoolwork and entertainment. This proposition is further supported by ABS data\textsuperscript{[4]} and by the ACMA 2007 Media Literacy report\textsuperscript{[2]} which found that ‘family’ ownership of computers is markedly higher than ‘household’ ownership. The category ‘household’ includes shared households of people who are unrelated by birth or marriage and is less likely than the category ‘family’ to include young people of school age.

**Computer usage at home**

The majority of students (81.4%) use home computers every day or almost every day (daily). Students from private schools (90.5%) and from the highest SES bracket (88.1%) are more likely to use their computers daily and boys (84%) are more likely than girls (79.4%) to use their computers daily.

**Young people use their computers daily**

![Figure 12 Percentage of young people using their computers daily, weekly and rarely as a function of gender](image)

Figure 12 Percentage of young people using their computers daily, weekly and rarely as a function of gender
Private school students use their computers more often than those in government and Catholic schools

Figure 13 Percentage of young people using their computers daily, weekly and rarely as a function of school sector

Young people from higher SES brackets use computers more often than those from lower SES brackets

Figure 14 Percentage of young people using their computers daily, weekly and rarely as a function of SES
Young people use their computers for at least an hour per day

The majority of students use their computers for at least an hour a day, with boys more likely than girls to spend more than five hours on a computer both on school days (5.8% vs 2.6%) and on weekends (21.0% vs 12.4%). The difference in time spent on the computer is likely to be related to the type of activities preferred by boys (entertaining themselves, often via immersive games) versus girls (communicating with others or doing schoolwork).

Digital activities with and without the internet

This study focused on the relationship between digital technologies and cultural form in a rapidly changing technological environment which increasingly blurs the distinction between local and distant information and data sources. The survey, conducted in 2006, considered computer usage with and without the internet as separate categories. Just a few years later, always-on broadband internet blurs the distinction for many activities (such as listening to music, watching TV/movies, sharing images), demonstrating the effect of the rapid rate of change of digital capabilities on received cultural forms.

The difference between listening to music online versus offline is a distinction between streaming media and media which are downloaded to the local machine before being played. From a young person’s perspective, the online/offline distinction may have been interpreted as a distinction between music which was downloaded to the computer from the internet versus music which was uploaded to the computer from another source. ‘Listening to music while on the internet’ might also have been interpreted as listening to music via the computer while surfing the web with absolutely no regard to the source of the music or the means by which it was being played. In a similar vein, ‘using CD-ROMS’ at the time of the survey might have been a useful shorthand for using specific packaged software (eg, Microsoft’s encyclopaedia EnCarta, educational software programs) and distinguishable in terms of implied cultural form from ‘watching DVDs’ (movies, TV series). However, today,
the distinction between DVD, CD, memory stick and internet download is emphatically one of delivery medium rather than cultural form/genre. It must be noted that the form and medium are not always so easily separated.

Young people engage in a range of computer-based activities

Figure 16 Percentage of females and males engaging in a range of computer-based activities without accessing the internet
The most common activity carried out on a computer by young people without connecting to the internet was listening to music, with over half the sample saying they did this on most days. The survey did not investigate whether young people turned on their computer to listen to music or whether, once the computer was on, listened to music through the computer. Given the widespread availability of CD and mp3 music players as alternative music-playing devices, it seems more likely that young people listened to music through the computer when they were using it for other things rather than specifically switching it on to listen to music.

Girls were less likely than boys to play computer games, watch DVDs, use CDs, organise files and undertake programming. Girls were more likely than boys to play with images and photos and to write. The survey did not distinguish between activities required for school and purely recreational activities. For example, ‘writing’, ‘making charts and tables’, ‘designing things’, ‘making films and animations’, and ‘programming’ are activities that might be required by certain school subjects or might be undertaken for recreational purposes (or perhaps for both). It may be that any differences across gender, school sector and SES in computer use for these activities reflect differences in subject choices and the ways in which certain school subjects are taught more than a difference in preferred computer usage.
Young people engage in a range of internet activities

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<td>MAKE WEB PAGES</td>
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<td>BUY THINGS</td>
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KEY:
- Wording of Survey
- GET INFO FOR SCHOOL: Finding information for school
- SURF: Surfing the web
- EMAIL: Communicating using email
- CHAT: Communicating using chat
- MUSIC: Listening to music
- DOWN LOAD STUFF: Downloading stuff
- PHOTOS: Sharing photos
- BLOGS: Reading/writing blogs
- NEWS: Reading news/weather
- TV OR MOVIES: Watching TV or movies
- GAMES: Playing online games
- MAKE WEB PAGES: Creating web pages
- BUY THINGS: Buying things

Figure 17 Percentage of females and males engaging in a range of computer-based activities while accessing the internet

Young people engage in a broad range of activities while using the internet at home, with ‘surfing the web’, ‘communicating using chat or email’, and ‘listening to music’
the most widespread activities. Boys are more likely to ‘play online games’, to ‘download stuff’ and ‘watch TV/movies’, while girls are more likely to ‘share images and photos’ and ‘find information for school’.

Since the survey was designed, there has been an upsurge in the use of social networking software by young people through sites such as Facebook and MySpace. Social networking sites collect together a range of internet tools via a personalised portal interface which emphasise participation in social networks. Although many of the internet tools available through social networking sites are not new, they have been implemented so as to facilitate the users’ ability to share text, images, video and, most importantly, to share their network of ‘friends’. The emphasis on functionality rather than technology makes it more difficult to document uptake of specific digital technologies.

Some survey participants may have categorised maintaining a MySpace profile as ‘creating web pages’ or ‘writing blogs’, whereas others may not have considered a MySpace profile to be the same as a web page. Some survey participants may have equated communication on a MySpace page with ‘communicating via chat’. Having a MySpace page with photos might have been considered by some survey participants to be the same as ‘sharing Photos’, by others as ‘creating web pages’ and by others as both. Suffice it to say, it is not immediately clear exactly how the emerging activities would align with the terminology used in the survey.

It is probably the case that social networking sites are, in fact, an emergent cultural form, specifically associated with the internet. Social networking sites allow ‘hanging out with friends’ or keeping in touch with family (maintaining links with people known face-to-face) outside the constraints of a shared time/space location. Being ‘on Facebook’ or ‘on MySpace’ have become legitimate pastimes in their own right in the same way as ‘watching television’ emerged as a cultural form independent of the content being transmitted[1]. Social networking sites involve using a range of digital technologies and internet tools within a context of social communication and interaction.

Analogous issues are noted in the explanatory notes for the ABS survey on children’s cultural activities[5]. For example, in 2003, ‘involvement in Internet activities and emailing’ was a single activity, and no distinction was made between using email and using chat rooms. In 2006, using email and using chatrooms became separate categories. Similarly, in 2003, playing games on a computer included playing online games and finding information related to games, whereas in 2006, computer games and internet (online) games became separate categories and finding information relating to games was classified as ‘other Internet activity’. In 2003, downloading music from the internet would have been classified as ‘other activities relating to internet usage’ whereas in 2006, it became a separate category.

As this research demonstrates, any survey attempting to capture emerging cultural forms in the context of a rapidly changing technological landscape can only ever be a snapshot in time and will inevitably contain elements of earlier ones.
Digital technologies in young people’s bedrooms

Young people play music and watch TV or videos in their bedrooms

The majority of young people had a CD player, MP3 player or stereo in their bedrooms. About half (53%) had a television in the bedroom, while less than half had computers (38%), DVD players (41%), and/or games consoles (37%) in their bedrooms. Less than a third (29%) of young people had internet access in their bedrooms.
Solo use of technology is more likely for items located in the bedroom than items located elsewhere in the home

Figure 19 Percentage of young people engaging in solo usage of various digital technologies when technologies are in their bedrooms compared with elsewhere in the home

Young people with digital technologies available in bedrooms used them more often alone than young people who did not have those technologies available in their bedrooms. The survey did not explore the degree to which the use of internet technology in the bedroom allowed social engagement outside of the home through use of communication tools and/or online games.

Social use of technology is more likely for items located in the bedroom than for items located elsewhere in the home

Figure 20 Percentage of young people engaging in social usage of various digital technologies when technologies are in their bedrooms compared with elsewhere in the home
Young people with digital technologies available in bedrooms also used them more often with friends than young people who did not have those technologies available in their bedrooms. This would suggest that items of digital technology in the bedroom are selected by young people and are therefore the items they are most likely to use with their friends when they visit.

We can speculate on the reasons why televisions in the bedroom are not used much more with friends than televisions in other parts of the house. First, television-watching appears to have become a background ‘time-filling’ activity and favourite TV shows can be recorded for later viewing. Second, although the survey did not address how many televisions were in each house, it may be that if the televisions in young people’s bedrooms are not the best in the home, when they want to watch television, they will do it in a shared space on the superior television screen. Of the digital technologies popular with young people, television has been around for the longest. Watching television is so much a part of most people’s everyday life that television is not a technology that young people need to have in their own space.

**Young people with cable TV tend to watch TV for longer than those who do not have cable TV**

![Figure 21 Number of hours spent watching TV for young people with and without cable TV in the home and with and without cable TV in their bedrooms](image)

Young people with cable TV tend to watch more TV than those without cable, especially if cable TV is available in the bedroom. This holds true both on school days and on weekends. Television was watched for longer on weekend days than school days, but this may reflect the fewer hours available in the day to watch television on school days.
Girls multi-task more than boys while watching TV

![Graph showing activities engaged in while watching TV for females and males](image)

Figure 22 Activities engaged in while watching TV for females and males

Although almost all students (99%) still watch television every day, often for a number of hours at a time, the responses to multi-tasking questions in the survey suggest that it is more of a default or background activity rather than a primary focus of attention. Less than a quarter of students just watch television, with most students also doing a range of other activities at the same time. Girls are more likely than boys to multi-task and are more likely to read, talk or text than boys. Although it is believed widely that young people today are able to multi-task in ways beyond older people’s capabilities, the activities they engage in while ‘watching television’ could be characterised as background, ‘time-filling’ activities. The structure of most televised content, even on stations free of commercial advertising, involves frequent breaks in the flow of information (commercials and/or station promotions) and a great deal of repetition so that it is possible for a television program to remain relatively coherent with very little investment of attention. Thus, it is not clear that engaging in other activities while watching many television programs requires multi-tasking in any meaningful sense. Rather, other activities are used to fill the gaps in television programs generated by advertisements, station promotions and program recaps.

Television as a cultural form is no longer beaming into households and shaping the social flow of interactions between household members (see Williams[1]). Increasing use of personal digital technologies means that the need to negotiate the nature and content of shared viewing and listening streams has dissipated. A young person can engage in solo activities within the same space or be physically present in one space while engaging socially with young people in another location. The capacity of parents and teachers to monitor the social and educational activities of young people in this changing media environment presents new challenges.
Rules on computer and internet use

Young people with computers in their bedrooms rather than in shared spaces are less likely to have rules on computer use and/or stick to those rules.

![Graph showing percentage of young people who stick to the rules as a function of location of the computer.](image)

Figure 23 Percentage of young people who stick to the rules as a function of location of the computer. Only young people who have rules for computer use at home were included in this analysis.

Young people with computers in their bedrooms were less likely to have rules about the use of computers than those with computers in shared spaces (30% compared with 49%). They were also less likely to stick to the rules that had been set. This suggests that both the placement of computers and the setting of rules for computer use are influenced by the same desire for some degree of parental oversight of homework and of entertainment and communication choices.
Being Digital at School

Schools have computers both in computer labs and classrooms

Most students across the three school sectors reported using computers at school in computer labs, with around half also reporting using computers in classrooms.

Private school students are more likely to own and use laptops than those from other school sectors

While more than 30 per cent of students in all government and Catholic sector schools reported having their own laptops, fewer than five per cent of these students reported
bringing their laptops to school. By contrast, around half of the private school students had their own laptops and, of these students, 40 per cent brought the laptops to school.

**Young people at private schools have better access to computers than those at government or Catholic schools**

![Figure 26 Percentage of students as a function of whether they agree, disagree or are neutral on their school having a sufficient number of computers](image)

Students from government (48%) and Catholic (55%) schools were less likely to be satisfied with the number of computers available at school than those from private schools (73%).
Young people learn most about the internet by themselves

Figure 27 Percentage of young people who report learning a moderate amount or a lot about the internet from different sources

The majority of young people report learning ‘a moderate amount’ or ‘a lot’ about the internet by themselves or from friends, with very little difference in information sources for girls and boys. Around half of those surveyed report learning at least a moderate amount about the internet at school. However, 11 per cent of those surveyed reported not learning anything at all about the internet from school (girls 8%, boys 14%). These data may indicate that schools could be doing a better job in teaching students about the internet or, alternatively, that by the time young people begin using the internet at school, they have already learnt about it from their other sources.
School rules on computer use affect ability to complete schoolwork

Figure 28 Percentage of students who think rules affect their ability to complete schoolwork. The category ‘blocked’ includes students who reported inability to access sites as the impact of rules on their schoolwork.

Most students surveyed used computers at school at least weekly. Students at private schools were more likely to use computers daily (58%) and were more likely to use their own laptops at school. For the majority of students, school rules governing use of computers were perceived to affect their ability to complete schoolwork. Almost half the students sampled (42%) said that many sites were blocked by internet filters. A number of these students (5%) also referred specifically to the blocking of email which prevented them from transferring files between school and home using their preferred accounts. Students at some schools were constrained by the internet download limits of their schools’ internet services.
Regular users of school computers are more likely to be affected by rules than those using school computers less frequently

![Figure 29 Effect of rules on schoolwork as a function of frequency of use of school computers](image)

A small number of students (1%) who did not consider their ability to complete schoolwork was affected by school computer rules said that they never used the school computers which was the reason rules did not affect them. The implication of this pattern of response is that the school computers were not enticing and that they preferred to use their home computers.

A number of students (5%) who did not think that rules affected their ability to complete schoolwork commented that the rules were annoying and affected their ability to engage in other activities on the computer. However, they admitted that this was a good thing as it kept them focussed on their work. Some students complained that they could not listen to music on the computer while completing their school work.

There was a slight trend towards the perception that rules affect schoolwork for students who used school computers more often. However, the fact that 50 per cent of students who did not use school computers reported that rules affected their ability to do schoolwork supports the idea that rules result in students not using the computers at school. Students who reported that rules affected their ability to complete schoolwork were slightly less likely to stick to rules. But, overall, most students kept to the rules most of the time.

**Computer activities at home versus at school**

The most popular activity on home computers was communicating with people (44%) and the next most popular activity was entertainment (29%). Boys were more likely to use their home computers for entertainment (46% vs 12%), whereas girls were more likely to use their computers for communication (57% vs 32%).
Students in the government school sector were more likely to use their home computers for entertainment (31.4% vs 25.9% and 23.3% for Catholic and private sectors respectively). Students in the Catholic school sector were more likely to use home computers for communication (49.6% vs 46.5% and 42.2% for private and government sectors respectively). By contrast, doing schoolwork (35.4%) and finding information for school (32.8%) were the most popular activities on school computers. Students in the private sector were more likely to use computers for schoolwork (home computers: 15% vs 9% and 10% in the government and Catholic sectors respectively; school computers: 42% vs 35% and 34% in the government and Catholic sectors respectively).

Young people use home computers for leisure and school computers for school work

![Figure 30 Percentage of students who spend the most time engaged in various activities on computers at home versus at school](image)

More boys than girls use computers for entertainment and fewer boys than girls use them for communication and schoolwork

![Figure 31 Percentage of females and males who spend the most time engaged in various activities at home and at school](image)
More private school students use computers for schoolwork and fewer for entertainment compared with other school sectors.

Figure 32 Percentage of students from different school sectors who spend the most time engaged in various activities at home and at school

Technologies that students take to school
Mobile phones and laptops can be construed as tools for communication and for school work respectively, whereas music players and game devices are tools for entertainment.
Many students take mobile phones but few take laptops to school

Figure 33 Number of students by gender who report owning laptops and mobile phones compared with the number who report taking them to school

Many students take music player but few take game player to school

Figure 34 Number of students by gender who report owning music players and game devices compared with the number who report taking them to school

The majority of students had mobile phones (92%) and music players (88%) and many of them took these devices to school (75% and 59% respectively). Relatively fewer boys took mobile phones to school, but girls and boys were equally likely to take their music players to school. Boys were more likely than girls to own portable game devices and more likely to take them to school. Girls were more likely than
boys to own laptops, but very few students (less than 5%) took game devices and laptops to school.

**Boys are more likely to talk only and less likely to text only than girls**

![Figure 35 Usage of talk versus text on mobile phones at home and at school by gender](image)

Although the majority of students used mobile phones at home and at school, and most students talked and texted with their phones, girls were more likely than boys to send texts to their friends and to talk to their families from home. Neither girls nor boys used talk mode to friends exclusively at school, although some only talked to their families. This is more likely to reflect the preferred communication channel of family members rather than the preferred mode for young people, who seemed happy to switch from talk to text mode depending on social circumstances. The preference for text mode to friends from home may reflect a desire to keep the content of communication and the identity of communication partners from being known to family members.

**Communication and Gaming**

The technology that would be missed the most by young people was the internet (27%), followed by mobile phones (18%) and TV (17%). Although this might be interpreted as a shift away from the genres traditionally associated with TV as the delivery medium, it is worth noting that TV as a technology is more restricted in use than the internet and mobile phones. TV shows can be viewed via the internet and, increasingly, can be displayed on the screens of mobile phones. The versatility and
The portability of new digital technologies may account for the fact that TV (as distinct from television content) is less likely to be missed by young people.

The most striking gender difference in the use of digital technologies was the preference boys had for electronic games and girls for communication tools. The preference of boys for games is supported across earlier school years by ABS data on 5-14 year olds[5] which shows that more boys play electronic games than girls and boys play games for longer time periods each day than girls.

Both girls and boys were equally engaged by internet, television and music players, although girls were more likely than boys to spend more than three hours per day listening to music (66% vs 47%). Indeed, television and music were so pervasive and so much part of the background environment that they didn’t seem to rate highly on the technology radar. The popularity of mp3 players is more likely to reflect size, portability and ‘cool factor’ than technological function. By contrast, there were differences in terms of ownership of mobile phones and gaming devices between girls and boys, but these differences were much smaller than the differences in usage. This would suggest that access to technology alone is not the primary factor driving different usage.

**Girls miss mobile phones and boys miss games**

![Figure 36 Item of digital technology that would be most missed by young people. Students were asked to name just one thing that would be most missed.](image)
Playing games
The survey distinguished between video games (games console), computer games and online games, distinctions which are becoming increasingly blurred as the electronic games market evolves.

Boys who play online games also play offline games

Figure 37 Frequency of young people playing online games and playing offline video/computer games as a function of gender

Boys who play offline video or computer games were also likely to play online games often, whereas girls who played games offline did not as readily make the online transition, which suggests that girls prefer to play with people they already know. There was a smaller subset of girls and boys who played online games in preference to offline games. There were many more girls than boys who had never played online or offline games.
Online gamers have high speed internet connections

Not surprisingly, young people who play online games regularly were more likely to report having broadband internet than dial-up.

**Communicating**
While boys have a preference for playing games, girls consistently reported higher engagement with digital technologies for communication, such as using mobile phones for talk and text and communicating via chat and email, than did boys.

**Young people who use email also use chat often**
More girls than boys chatted most days (70.0% vs 63.6%) and emailed most days (58.6% vs 44.5%), and those who were high users of chat or email appeared to use both forms of technology at a high rate.

**Young people who use chat often are more likely to own a mobile phone**

![Figure 40 Frequency of using chat as a function of gender and whether or not the young person owns a mobile phone](image)

Similarly, use of a mobile phone aligns with use of chat, so that one does not replace the other. The young people who engaged with communications technologies used as many channels as were available to them.
Young people engage more in solo than social activities after school

Figure 41 Solo after school activities compared to activities with friends

Young people engaged with activities listed in the survey more often by themselves than with friends after school. Most young people used the internet or watched TV, and over half listened to music and used their phones. The most popular activities to engage in socially (ie, with friends) were watching television and DVDs and playing with games consoles. The reported use of phones with friends is difficult to interpret. It is not clear whether survey respondents were referring to social phone use where they were with friends and talking to someone not colocated with them via the phone, or whether they were including phone conversations with non-colocated friends as an activity with friends.
Boys play more computer/video games and watch more videos than girls

Figure 42 Solo after school activities as a function of gender

The biggest gender difference in solo activities is that boys were more likely than girls to play computer and video games. The difference was less pronounced for video games when friends were present. This was driven by the fact that fewer boys played videogames with friends (30%) than alone (57%) rather than by more girls playing videogames with friends (21% solo vs 19% with friends).
Girls watch more TV with friends and communicate more than boys

![Graph showing after school activities with friends as a function of gender](image)

Girls engaged socially in more of the digital activities surveyed than boys. The survey data do not provide insight into other activities boys might have engaged in with friends, nor allow us to comment on whether girls spend more time with their friends or whether boys engaged in more active non-technology pursuits (such as sport) with friends. ABS data on activities engaged in by young people from five to 14 years old[^5] (younger than the sample in this study) show that girls participate more than boys in arts and crafts (36.6% vs 16.6%) and reading for pleasure (77.8% vs 61.8%), whereas boys participate more than girls in skateboarding/rollerblading (22.4% vs 9.4%), bike riding (65.6% vs 32.2%) and organised sports (68.9% vs 57.8%). Dancing is the only physical pursuit in the ABS data in which girls participated more than boys (19.1% vs 1.9%).

[^5]: ABS 2007, 5318.0 and 5317.0.
Private school students use the internet more and video games less than government school students when on their own.

Figure 44 Solo activities after school as a function of school sector

There were minor differences between solo after-school activities of students in different school sectors, with private school students using the internet more and playing fewer video games than those from other sectors. The increased use of the internet and slightly greater engagement with books shown by private school students might reflect a greater emphasis on homework in the private school sector.
Government school students engage in more activities with friends than students in other sectors

![Figure 45 After school activities with friends as a function of school sector](image)

There were also subtle differences across school sector between after-school activities engaged in with friends. Students in government schools were slightly more likely than those in the other sectors to engage in digital activities with friends, particularly video and computer games, DVDs and watching television. This aligns with the speculation that students in private schools (or perhaps parents and teachers of students in private schools) place more emphasis on homework and after-school activities than those in the government sector.
Favourite type of entertainment

Young people are most interested in comedy, music and sport as forms of entertainment

![Figure 46 Type of entertainment selected by females and males as the entertainment that most interested them](image)

Young people were asked to select from a list of entertainment types the one they were most interested in. Of entertainment types listed, comedy (23%), music (22%) and sport (14%) were the most popular. Music and comedy were more popular among girls (28% vs 25% respectively) than boys (28% vs 15% respectively for music; 23% vs 20% respectively for comedy), whereas sport was more popular among boys than girls (21% vs 8% respectively). Twenty-two per cent of categories listed in ‘other’ were combinations of the entertainment types listed. A small subset of young people included anime or cartoons (8% of ‘Other’ category), Drama/film/TV (8% of ‘Other’ category) or computer games (5% of ‘Other’ category) as the entertainment type of most interest to them.
Young people use a range of media to follow their favourite entertainment

Figure 47 Media through which young people follow their favourite type of entertainment

Young people were also asked to nominate the media through which they keep up with the entertainment type they were interested in. For some respondents, the media listed (eg, computer games, cinema/TV, comics) were actually the entertainment type of greatest interest to them, highlighting the complicated relationships between digital technologies, genres and cultural forms. As to be expected, the media selected by young people and the gender differences with media type (eg, girls prefer talking to friends and reading magazines; boys prefer playing computer games) align with their media choices documented elsewhere in this report. A small number of young people identified ‘training’ or ‘playing’ as the media through which they follow sport or music, and a small number expressed difficulty in interpreting the meaning of the question.
Concluding Remarks
This report has presented the findings from the survey of young people’s digital literacy practices at home, at school and in the community. Here we draw out some of the major themes and future challenges.

Major themes

Importance of demographic factors
It is evident from the findings summarised in the report that age, school sector, socioeconomic status and gender are important in understanding young people’s digital literacy practices in many aspects of their lives. Although the young people who participated in the survey were in no way homogenous, demographic factors continued to structure their lives as they engaged with new technologies at home, at school and in the community. Aged fifteen to sixteen, the young people were absorbed by peer-group culture, expressing themselves through their interests in music, social networks and games. School sector and socioeconomic status continued to make a difference to the quality of access to the internet with higher SES students privileged over students from less advantaged backgrounds. Gender differences persisted in the context of their use of digital technologies: girls communicated, boys played games, and both listened to music and watched TV. But preferences for a particular distribution platform – TV, mp3 player, CD player, computer – appeared to be a matter of convenience rather than related to gender. Geographic remoteness did not seem to play a large role in the young people’s digital literacy practices, however, we could make only limited comment on the degree to which they used digital technologies to overcome barriers of distance.

Importance of digital technologies for entertainment and schooling
Almost ubiquitous home ownership of computers and internet access suggest that parents and guardians regard them as important for young people’s schooling and entertainment. A range of communication technologies were used for interaction with friends and family, searching for information, sharing information and moving information from one place to another. The young people’s use of these technologies blurred the traditional distinctions between local and distant information sources. There was little evidence of innovative use of digital technologies in schools. Most of the young people reported that they learned how to use the internet outside of school rather than in the classroom. Further, the blocking of content and restrictions on computer and internet use in schools represented barriers to the young people’s productive engagement with the technologies for educational purposes.

The relationship between digital literacy practices and cultural forms
The complex relationship between the use of digital technologies and cultural forms proved difficult to capture in a technological environment that is rapidly changing. Conducted in 2006, the survey considered computer usage with and without the internet as separate categories. Just a few years later, always-on broadband internet blurs the distinction between many of these activities, including listening to music,
watching TV/movies and sharing images, thus demonstrating the effect of technological change on cultural forms.

Within the internet domain, new cultural forms that were not clearly defined at the time of the survey have emerged. Social networking sites such as Facebook and MySpace are community portals which combine a range of internet facilities including blogs, photo-sharing, chatrooms, friendship groups and community forums. These sites are increasingly playing an important role in defining individual and social identity amongst young people.

Importantly, television no longer simply beams into homes shaping the flow of interactions between household members. As young people’s use of personal digital technologies has increased, the need to negotiate shared viewing and listening streams has dissipated. Within a shared space in the home, young people can engage in solo activities with digital technologies or engage with other young people who are in a different location altogether. The capacity of parents and teachers to understand and monitor the social and educational activities of young people in this changing digital environment presents new challenges.

However, the survey demonstrated not just a changing media environment, but also the persistence of continuities and connections between old and new cultural forms. The use of new digital technologies does not necessarily mean that older cultural forms are displaced; rather, they are reshaped and refashioned in contemporary contexts of use. As the current tendency is towards a convergence of previously separate technologies, cultural forms and literacy practices, there is now a strong case for thinking about the use of new technologies in combination. Different cultural forms are coming together with important implications for teaching and learning in schools.

**Future challenges**

This and other surveys have tended to focus on specific technological devices and platforms. However, as devices such as mobile phones have become the ‘Swiss army knife’ of digital technology, incorporating music players, personal digital assistants, calculators, cameras, file storage, web browsers and email functions, such a focus seems less and less useful.

Social networking sites, such as Facebook and MySpace, which have become hugely popular since the survey was completed, challenge current understandings of personal and social identity, privacy and social interaction.

While TV allowed the outside world to channel information into the home, the internet is bi-directional, allowing information to flow in and be sent out. The flow of information can be filtered but information control requires the establishment of rules and boundaries to allow privacy while ensuring safety. As a result, some of the biggest challenges of all in young people’s use of digital technologies relate to boundaries, rules, privacy and censorship.

In the context of the Government’s ‘education revolution’, finding effective ways to ensure that the young people in the nation’s schools develop the critical digital literacy capabilities required to participate in society as informed, active citizens represents a major challenge.
The Government’s national curriculum initiative provides an important opportunity to create a responsive, forward-looking curriculum that takes account of the digital knowledge and experience which many young people have already acquired by the time they come to school. As it is no longer possible to continue with the assumption that young people live exclusively in the world of print, there are some key questions for curriculum development. These centre on which genres or cultural forms and which practices should be taught and through which combinations of digital technologies. Other questions relate to young people’s production of texts. Students are no longer just consumers and producers of print texts; they are also consumers and producers of digital texts that they can remake and redesign. Under these conditions, the aims of education need to include opportunities for students to become informed, critical users and producers of many media.

Finally, both pre-service teacher training and in-service teachers’ professional development programs need to provide opportunities for teachers to gain the understandings, confidence and skills to integrate effectively the use of digital technologies and new cultural forms into their pedagogical and curriculum practices.
References


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Credits

Ilana Snyder is an Associate Professor in the Faculty of Education, Monash University. She has published extensively in the area of literacy and technology studies. Her publications include: *Hypertext* (Melbourne University Press 1996), *Page to Screen* (Allen & Unwin 1997), *Teachers and Technoliteracy*, co-authored with Colin Lankshear and Bill Green (Allen & Unwin 2000), *Silicon Literacies* (Routledge 2002), *Doing Literacy Online*, co-edited with Catherine Beavis (Hampton Press 2004) and *The Literacy Wars* (Allen & Unwin 2008). Dr Sue North was of great assistance with the questionnaire design, its administration and the statistical analysis. Mr Scott Bulfin, who was the doctoral candidate working on the project, assisted with the questionnaire design. Dr Lisa Wise completed some statistical analysis and was instrumental with the production of the report. Mr Andrew Smith designed the publication. Minuteman Press Thornbury printed the publication.