Contemporary (Digital) Literacy Practices of Year 9 Students

Opportunities for aligning in and out of school contemporary (digital) literacy practices

“A typical Year 9” - Artwork by students at Preston Girls High School
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1. Introduction

The pace of innovation in digital devices, the explosion in the numbers of applications available, the ways in which these are converging and crossing platforms, and the diversity of uses which these devices and applications make possible are creating challenges for educators to recognise and respond to the opportunities for literacy learning which they potentially open up. Moreover, the rate of development in digital technologies and the multiple fronts on which this is occurring is stretching the capacity of everyone in education to keep up and understand what is happening. Students use digital technologies as part of their everyday life both in and out of school for learning, socialisation and play. While there is growing systemic evidence of the positive impact of technologies in classroom learning on student learning outcomes (DEECD 2011), little data exists on student use of technologies and their associated contemporary (digital) literacy practices outside of school hours, and the implications of these out-of-school practices on the development of formal curriculum experiences and new possibilities for practice in schools.

In 2011, the Department of Education and Early Childhood Development (DEECD) along with ten secondary schools (randomly selected from across Victoria) examined the use of technology by Year 9 students outside of school hours and consulted them on their preferences and suggestions for the use of technology use in the classroom. The key outcomes and benefits from completing this project were:

- A shared understanding, derived from the literature, of what is meant by contemporary literacy practices, their importance and evidence of current in-school practices that support their development
- Increased understanding (and evidence-base) on how students in Year 9 use digital technologies outside of school
- Increased understanding of online safety practices by Year 9 students outside of school hours
- Increased understanding of the implications for teachers and teaching practice to align contemporary literacy practices developed at home with those developed at school
- Increased understanding by teachers of how to collect, analyse and act on classroom-based data
- Increased student voice in designing and implementing research.

The report summarises the findings from the Contemporary literacy practices of Year 9 students research project. It also outlines the methodology used and provides evidence of students’ current use of digital technologies outside of school, the cybersafety issues experienced by this cohort and student views on how the technologies used at home can be used in the classroom for learning.

2. Methodology

A shared understanding of contemporary (digital) literacy:

The research project commenced with a literature review that explored the use of digital technologies by young people in Australia and overseas and what it means to be literate in contemporary times.

Out of school use of technology:

All students participating in the research were asked to complete ‘A day in my digital life’ diary (Appendix A) where students recorded their technology use and purpose of usage for the entire day from when they woke up until school started, and again from when they left school till bed time (Figure 1). A total of 158 responses were received from 10 schools.

The value Year 9 students place on technology:

The students participating in the research were asked to complete a ‘I couldn’t do without my …’ survey (Appendix B) which questioned students about their favourite (Top 5) technologies, apps/software and digital literacy skills. A total of 146 responses were received from 8 schools.

Cybersafety experiences of Year 9 students:

All students participating in the research completed an ‘Exploring some of the dangers of digital technologies’ survey (Appendix C). The survey explored the frequency of cyberbullying using digital technologies, the technologies used for bullying and the impact of cyberbullying on the students. A total of 125 responses were received from 7 schools.

In-school use of technology (teacher reported)

Teachers participating in the research were asked to complete a survey on how they use digital technologies in the classrooms, their access to technologies for teaching, the benefits and challenges of using technologies in teaching and learning, how they address safety issues in the classroom and the possible impact of technologies on student learning (Appendix D). Seven of the ten participating teachers responded to the survey.

Opportunities for aligning in and out of school contemporary literacy practices (student perspective)

A facilitated workshop was held that involved a discussion about whether social media (e.g. Facebook, Twitter, Skype), gaming technology (e.g. PlayStation, Wii, Nintendo DS) and/or mobile devices (e.g. mobile phones, iPods, tablets, MP3 players) can be used in learning and how, from a student perspective. All Year 9 classed involved in the research project were invited to participate in a facilitated workshop. In the final few minutes of each workshop students were asked to record any interesting, unusual or surprising thoughts or observations that had arisen during the discussion.
workshop. Seven of the ten teachers in the research arranged for these workshops to occur.

3. A shared understanding of contemporary literacy

Understanding what it means to be literate today has become more challenging as the pace of technological development and uptake of digital devices by young Australians increases.

Bawden (2008, p. 19) identifies both the challenge and the imperative for educators to develop digital literacies when he notes that ‘all information today is either digital, has been digital, or could be digital.’

A somewhat expanded view of literacy is also documented in the draft Australian Curriculum (ACARA, 2011), which recognises the need for multimodal literacies, as evidenced in the English Year Level descriptions: ‘By the end of Year 7 students listen to, read and view a range of spoken, written and multimodal texts, analysing and comparing text structures and language features and vocabulary choices, to show how these shape meaning and influence readers.’ The use of the term ‘readers’ however suggests ‘consumption’ rather than ‘production’ of multimodal texts.

Darling-Hammond (2010) explored the nexus between new times and the capabilities such times demand by conceptualising what learners will need to develop to be successful in the 21st century – design, problem solving and analytical skills, the ability to use a wide range of tools and resources, the capacity to work both independently and collaboratively, well-developed communication skills and creative capacities. She quotes from a 2007 US Government report, which highlights the sophisticated skills and competencies employers ‘the world over' will be looking for in new employees:

*Candidates will have to be comfortable with ideas and abstractions, good at both analysis and synthesis, creative and innovative, self-disciplined and well organized, able to learn very quickly...work well as a member of a team and have the flexibility to adapt to frequent changes in the labour market as the shifts in the economy become ever faster and more dramatic. (p. 1)*

There has been a great deal of activity internationally to identify the crucial skills and competences that students will need to prosper and thrive in the 21st century. One well-resourced body working in this area is the Assessment and Teaching of 21st Century Skills (ATC21S, 2010), which is closely connected to global assessment bodies under the auspices of the Organisation for Economic Cooperation and Development (OECD) and the International Association for the Evaluation of Educational Achievement (IEA), who are behind the Programme for International Student Assessment (PISA) assessments. ATC21S are developing a more contemporary take on literacy, which is likely to be reflected in updated PISA assessments in 2013.

ATC21S (2010) defines these contemporary skills into four broad categories: a) ways of thinking (creativity, critical thinking, problem solving, decision making), b) ways of working (collaboration, communication), c) tools for working (ICT and Information literacy), and d) skills for living in the world (citizenship, intercultural understanding).

A significant challenge in identifying and articulating contemporary literacies is therefore the student learning outcomes the system chooses to prioritise or ‘spotlight’. The type of student learning that is promoted at a system level is highly likely to affect what school communities attend to, particularly when there are consequences for inattention (Hargreaves & Fullan, 2009).

Statistics of young people’s use of technologies

According to the Australian Bureau of Statistics (2009a, 2009b), broadband internet is accessed by close to two-thirds (62%) of all households in Australia; between 1998 and 2009, Australian home access to the internet has more than quadrupled from 16% to 72%, with 79% of children aged 5-14 accessing the Internet for a range of purposes, with the most popular being educational activities (85%), playing online games (69%) and listening to or downloading music (47%). The proportion of children accessing the internet reflects age differences, with 96% of 12 to 14 year olds using the net compared to 60% of 5 to 8 year olds. A similar gap is reflected in mobile phone ownership with 76% of 12-14 year olds owning a mobile phone compared with 22% of younger children.

A major US study (Rideout, Foehr, & Roberts, 2010, pp. 2-3) reports that 20% of media consumption occurs on mobile devices—cell phones, iPods or handheld video game players.

The age at which digital devices are being accessed is also failing to include very young children as technical and skill barriers shrink (Chiong & Shuler 2010)

Digital, multimedia and online environments accessed by young Australians have become visually richer and more interactive, more participative and social, more ubiquitous and deeply integrated into their everyday lives. Moreover this trend is likely to continue via the rapid uptake of internet-enabled hand-held mobile devices. The challenge for educators is to find productive ways to make use of the manifold affordances of these devices for developing literate practices suited to the 21st century, rather than calling on students to leave them at home or switched off at school.
4. Out of school use of technologies by Year 9 students

4.1. Where were you when you completed ‘A day in my digital life’?

Students were at home (asleep) and waking from around 7am. In the hour between 8am and 9am they were on their way to school. From 4pm the proportion of students at school dropped back toward zero and 10% to 20% of students started to move into other activities. While the majority went home for most of the afternoon and evening, others moved in and out of home as they hung out with friends, visited a friends’ house, played sport or had music lessons, or went out with family. By 8 pm more than 95% of Year 9 students reported being back at home, with all returning home by midnight.

![Figure 1. Where Year 9 students spent their day whilst completing their digital diaries (blue – at home; green – other e.g. on the way to school or friend’s house; red – school)](image)

4.2. What technologies did you use?

Computers remained the principle technology used by Year 9 students after school hours (Figure 2) with as many as 40% of students using computers by 4pm and usage decreasing gradually to 20% by 11pm. Mobile phones were most popular immediately after school finishes (40% of students) dropping to about 20% use for the remainder of the afternoon and night but were the most popular technology used before school commences. Television watching was highest between 6 and 9pm (30% of students) after which usage steeply declines. iPod usage was approximately 15% increasing in popularity after 8pm when computer usage declined. Other technologies included gaming consoles (PS3, Xbox, DS and Wii), music technologies (radio, mp3 players, cd players, keyboards), cameras, household appliances (alarm clocks, hair straighteners, microwave, oven, fridge, toasters). These were used upon waking and steadily (10%) throughout the day.

![Figure 2. Technology use before and after school by Year 9 students surveyed.](image)

When the data was segmented by gender, girls had a higher rate of mobile phone usage especially first thing in the morning and as the evening drew on. Almost all of the gaming console use was by boys.

4.3. Technology usage per hour

The use of more than one device at a time was common practice (Figure 3). On average, for every student that recorded using technology during any hour of the day, they reported using an average of 1.16 different technologies during that hour. This was highest from 6pm to 10pm (where it was up over 1.2), and lower during the school day (generally around 1.0 to 1.1). This indicates that students had less diversity of technology use at school than they did after school hours.

![Figure 3. Number of technology uses by Year 9 students on a typical day](image)

The number of different technologies used was also slightly higher during after-school and evening times than it was during school hours (around 10 to 12 different technologies mentioned, compared with 7 or 8), although there was a small increase around 1pm–lunchtime.

4.4. Parental oversight of technology use

Finally, students were asked whether their parents monitored their internet access or mobile phone use.
Twenty percent (1 in five) of students said that their parents monitored their internet use. The response was slightly higher for girls (25%) than for boys (17%), although due to the small number of respondents the difference is not statistically significant. Only 6% of students said that their parents monitored their phone use. The figure was marginally higher for girls (8%) than boys (4%), but not statistically significant.

5. The value that Year 9 students place on technologies

5.1. Favourite technologies

The students were asked to rank the top five technologies they couldn’t do without. Computers (95%), mobile phones (85%), TVs (84%), iPods (71%) and gaming consoles (42%) were identified as their Top 5 technologies, with the numbers appearing in brackets indicating the percentage of students that nominated that particular technology in their Top 5 ranking (Figure 4). Cameras (26%), and household appliances (20%), and other music devices (16%) (e.g. radios/CD players) also featured in their choices.

5.2. What was the technology used for?

Computers were seen as the standard point of access to a wide range of applications for both personal and educational use. Students could use computers and laptops to do homework, surf the internet, communicate with friends via social media sites, and play games. The mobile phone was also seen by Year 9 students as a multipurpose device, with making/receiving phone calls just one of its many uses (and not necessarily the most common) – along with calls, texting, camera, and use of an alarm. The television was mainly seen as a relaxation device, providing some access to news and educational programs, as well as a technology on which to play games. The most frequently mentioned use of the iPod was for students to listen to music, although the iPod also has wider functionality (e.g. games, internet access, diary/notes).

5.3. If ‘I didn’t have access to this technology it would mean …’

Students indicated that if one technology was not available they would simply move to another technology to fulfil the required need as most technologies had multiple functionalities (e.g. no computer for Facebook then you can text/SMS or call on the mobile, one can play games on the computer or the iPod/console).

And if none of these main technologies were accessible to them, the Year 9 students said that they would have to do things such as read a book or the paper, play a musical instrument, go out and meet friends, play sport, or go to the cinema or a concert. But their lives would be nowhere near as enjoyable (or connected) as they are now.

“Without my Xbox 360 I would have to get a life ... actually talk to my mates.” (Student)

“If I didn’t have access to them I’d be bored, bored, bored.” (Student)

“iPod ... music is my drug ... without it I would die!” (Student)

“If I had no TV, I’d go to someone else’s house who did.” (Student)

5.4. Favourite programs and applications

In contrast to the concentration of student preferences for technology, there was an enormous diversity in students’ favourite programs, applications or games (Table 1).

But overall, 136 students listed 376 different items in their Top 10 favourite apps/programs, and 240 of these were mentioned by only one student. Only two of the most popular programs were specific apps, in this case games – Call of Duty (mentioned by 24% of students) and Angry Birds (mentioned by 15% of students).

In the full list of favourite programs/apps/games there were only nine that were mentioned by more than 16 students. Thirteen programs/apps/games had between ten and sixteen mentions, 21 had between five and nine mentions, and 93 received between two and four mentions.
Table 1. Top 10 (ranked) apps/programs used by Year 9 students

<table>
<thead>
<tr>
<th>Favourite program/application/game</th>
<th>Number and % of students ranking program/app/game at ... (136 student responses)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>%</td>
</tr>
<tr>
<td>Facebook</td>
<td>69</td>
<td>51%</td>
</tr>
<tr>
<td>iTunes</td>
<td>54</td>
<td>40%</td>
</tr>
<tr>
<td>YouTube</td>
<td>47</td>
<td>35%</td>
</tr>
<tr>
<td>Call of Duty</td>
<td>33</td>
<td>24%</td>
</tr>
<tr>
<td>Skype</td>
<td>30</td>
<td>22%</td>
</tr>
<tr>
<td>MS Office</td>
<td>27</td>
<td>20%</td>
</tr>
<tr>
<td>Google</td>
<td>22</td>
<td>16%</td>
</tr>
<tr>
<td>Internet</td>
<td>22</td>
<td>16%</td>
</tr>
<tr>
<td>Angry Birds</td>
<td>20</td>
<td>15%</td>
</tr>
<tr>
<td>Others</td>
<td>769</td>
<td>57%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1093</td>
<td></td>
</tr>
</tbody>
</table>

Other specific programs/games/apps that featured toward the top of the list were Fruit Ninja (15 mentions, 11% of students), Tetris (13 mentions / 10% of students), The Sims and Mario (each 12 mentions / 9% of students), Halo and Doodle Jump (each 10 mentions / 7% of students). MSN, Hotmail, Google Chrome, Safari and Windows Media Player also had more than ten mentions.

5.5 Skills acquired through the use of technology

The students were asked to identify what skill sets they are likely to acquire through the use of technologies. The responses to this question were poor (in terms of number responding and ability of students to identify contemporary literacy skills. Students did identify visual skills*, thinking skills, concentration, listening skills, communication skills, typing and manual dexterity (fast texting, motor skills for gaming).

*Visual skills include visual perceptual motor skills and ocular motor skills. Visual perceptual motor skills involve processing and using visual information, for example

- visual memory (e.g. recall visual information in chunks or in spatial/temporal sequence)
- visual spatial (e.g. mapping locations, direction concepts)
- visual analysis (e.g. matching, discriminating, identifying)
- visual motor integration (e.g. hand-eye coordination, visually guided mobility)
- visual auditory integration (e.g. matching sounds with image or symbol, decoding & encoding auditory to visual information)
- visualization (e.g. manipulation - can imagine flips & rotations or image, other)

Ocular motor skills include control of eye movements, fixations (looking at something at specific location in space) and focus.

- eye movements & tracking (saccades & pursuits, eye movements for reading)

(Source: http://psychology.wikia.com/wiki/Visual_skills)

One of the classes participating in the research identified and rated the skills acquired through the use of technology, rating visual/sight skills* the highest followed by reading, coordination, persistence and imagination (Figure 5).

Figure 5. Skills acquired through the use of technology

Other skills identified included listening skills, sourcing knowledge, oral skills, writing skills, ‘fast learning’ and intercultural understanding.

6 Online safety and Year 9 students

6.1 Cyberbullying rates amongst Year 9 students

Overall, one third (32%) of the 125 students that completed the survey indicated that they had been bullied via digital technologies (Table 2).

Table 2. Rates of cyberbullying experienced via digital technologies by Year 9 students

<table>
<thead>
<tr>
<th>School</th>
<th>No - Never been bullied</th>
<th>Yes – Have been bullied</th>
</tr>
</thead>
<tbody>
<tr>
<td>School A</td>
<td>62%</td>
<td>38%</td>
</tr>
<tr>
<td>School B</td>
<td>55%</td>
<td>45%</td>
</tr>
<tr>
<td>School C</td>
<td>70%</td>
<td>30%</td>
</tr>
<tr>
<td>School D</td>
<td>75%</td>
<td>25%</td>
</tr>
<tr>
<td>School E</td>
<td>83%</td>
<td>17%</td>
</tr>
<tr>
<td>School F</td>
<td>52%</td>
<td>48%</td>
</tr>
<tr>
<td>School G</td>
<td>82%</td>
<td>18%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>68%</td>
<td>32%</td>
</tr>
<tr>
<td>Male</td>
<td>82%</td>
<td>18%</td>
</tr>
<tr>
<td>Female</td>
<td>57%</td>
<td>43%</td>
</tr>
<tr>
<td>Metropolitan</td>
<td>72%</td>
<td>28%</td>
</tr>
<tr>
<td>Regional/Rural</td>
<td>65%</td>
<td>35%</td>
</tr>
</tbody>
</table>
None of the students said that they were bullied every day. For 22% of students this bullying had occurred ‘every now and then’, and while any bullying at any time is unacceptable, these students did not consider it to be a problem. A further 6% of students (a total of 7 students) reported that they had been bullied via digital technologies ‘several times’ and that this was annoying, and 4% (5 students) reported been bullied ‘quite often’ and that they really hated it. Across all schools and demographic groups the proportion of students reporting bullying at the combined ‘several times’ or ‘quite often’ level ranged from 6% to 15%.

Table 3. Frequency of cyberbullying (of those students that reported being bullied using digital technologies).

<table>
<thead>
<tr>
<th>School</th>
<th>Yes – Have been bullied</th>
<th>Yes – Every now and then but it’s not a problem</th>
<th>Yes – Several times and it’s annoying</th>
<th>Yes – Quite often and I really hate it</th>
<th>Yes – Every day and I wish it would stop</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>38%</td>
<td>30%</td>
<td>8%</td>
<td>-</td>
<td>0%</td>
</tr>
<tr>
<td>B</td>
<td>45%</td>
<td>35%</td>
<td>-</td>
<td>10%</td>
<td>0%</td>
</tr>
<tr>
<td>C</td>
<td>30%</td>
<td>15%</td>
<td>10%</td>
<td>5%</td>
<td>0%</td>
</tr>
<tr>
<td>D</td>
<td>25%</td>
<td>13%</td>
<td>6%</td>
<td>6%</td>
<td>0%</td>
</tr>
<tr>
<td>E</td>
<td>17%</td>
<td>11%</td>
<td>6%</td>
<td>-</td>
<td>0%</td>
</tr>
<tr>
<td>F</td>
<td>48%</td>
<td>38%</td>
<td>10%</td>
<td>-</td>
<td>0%</td>
</tr>
<tr>
<td>G</td>
<td>18%</td>
<td>12%</td>
<td>-</td>
<td>6%</td>
<td>0%</td>
</tr>
<tr>
<td>Total</td>
<td>32%</td>
<td>22%</td>
<td>6%</td>
<td>4%</td>
<td>0%</td>
</tr>
<tr>
<td>Male</td>
<td>18%</td>
<td>12%</td>
<td>2%</td>
<td>4%</td>
<td>0%</td>
</tr>
<tr>
<td>Female</td>
<td>43%</td>
<td>31%</td>
<td>9%</td>
<td>3%</td>
<td>0%</td>
</tr>
</tbody>
</table>

6.2 Technologies used for bullying

Ninety percent of the 40 students that reported having been bullied at any time via digital technologies (and 29% of all students completing the survey) said that Facebook had been used to bully them. Fourteen students (35% of those bullied or 11% of all students) had been bullied via text, nine students (23% or 7% of all students) had been bullied via instant messaging and six (15% of those bullied or 5% of all students) had been bullied via mobile phones. Emails, image sharing and MySpace were used less often, and no students reported having been bullied via Twitter. These results may reflect in part the relative level of use of each of these technologies by students for any purposes (not just bullying).

Figure 6. Percentage of students bullied via digital technologies

While Facebook is clearly a popular forum for all forms of social communication among teenagers, it is worth noting that of the twelve students that reported being bullied via digital technologies ‘several times’ or ‘quite often’, every one said that they had been bullied via Facebook. In addition, for this group of students only two had been bullied only via Facebook.

On average, Facebook was just one of two to three different technologies that had been used to bully them, with most reporting Facebook plus one or two of text/instant messaging/mobile phone as the additional means of bullying.

6.3 Impact of being bullied using digital technologies

Twenty three of the 125 students who completed the ‘Exploring some of the dangers of digital technologies’ survey (18%) indicated that they had at some time been made to feel really uncomfortable with digital technologies. Their responses generally related to other people talking to or about them through a digital medium (e.g. saying mean things, being abusive, spreading rumours) or being uncomfortable when they did not know someone who was trying to communicate with them online.

7 In school use of technology (teacher reported)

7.1 Classroom access to devices

Fifty percent of teachers had computer/internet access in the classroom. Although the education system equips
all teachers with laptops, internet access was not always available in the classroom (Table 4).

### 7.2 Current use of technologies in teaching (purpose and frequency)

Teachers described the technologies they most commonly used in their classroom, the purpose and frequency of use, and their capacity to use each technology. Across the seven teacher surveys received, 18 uses of technology were recorded, as shown in Table 4.

**Table 4. Teacher access and use of technologies in their classrooms.**

<table>
<thead>
<tr>
<th>Technology</th>
<th>I have regular access to in the classroom</th>
<th>I have used with my students this year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobile phone</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Computer/internet</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Digital/flip cameras</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>iPod/iPad/MP3 player</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Games (online/consoles)</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Virtual conferencing/Skype</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>eReaders</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Interactive whiteboard</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Ultranet</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Digital microscopes</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

Teachers reported frequent or moderate use of computers in the classroom, and that this was an easy technology to use in teaching.

Most of these teachers used computers and the internet to allow students to conduct research (e.g. Google) or present their learning (e.g. using MS Office programs, Word), with a couple using the computers for specific curriculum activities (e.g. testing mathematic concepts using Clickview, using translation software, document sharing and wikis, Thrass (www.thrass.com.au) for vocal development), and for communication (email, skype). The two teachers who had used the Ultranet for teaching and learning purposes did not use it frequently.

### 7.3 The benefits of using technologies in the classroom

Teachers were asked to reflect on the benefits of digital technologies in the classroom. Apart from the use of technology being seen as keeping up with modern trends and students’ preference for digital engagement (although token use of technology should be avoided), some teachers noted the value of technology facilitating increased access to relevant learning resources and activities that might not otherwise be available. They also believed technology can change the classroom dynamic, and empower students to take responsibility for their own learning.

"Students tend to become more engaged when technology is included in your lesson, regardless of what you do with it or how long you use it" (Teacher).

"The material available on YouTube is useful. I'm able to download specific clips – like Alfred Hitchcock commenting on scenes from Psycho or Rear Window, or footage of Vietnam moratoriums – and small clips are easily discussed" (Teacher).

### 7.4 Challenges of using technologies in the classroom

When asked what they saw as some of the challenges of using digital technologies in the classroom, teachers’ immediate responses related to hardware and ICT infrastructure. Issues included:

- access to sufficient computers/devices for a class
- slow internet speeds
- unstable networks
- uncharged or non-functioning Netbooks.

"Relying on technology to work as expected is always a gamble. I have had to alter MANY lessons over the years, and it's exhausting" (Teacher).

Teachers also expressed some frustration at their own inability to keep up with the pace of change of contemporary technology and the speed with which students could learn, adapt to and use new technology, programs and applications. It was noted that teachers needed to become aware of teaching strategies that could be used to effectively employ new digital resources in the classroom.

"The students have much more knowledge than I, but I need to guide them. Therefore I need to learn" (Teacher).

### 7.5 Safe, responsible and ethical use of technology in the classroom

Teachers were asked how they addressed the safe, responsible and ethical use of technology in the classroom. They noted the importance of educating students about respect and the impact of online bullying. An effective approach to responsible use of technology at school was thought to involve:
• increasing their own and their students’ understanding of the school’s cyberbullying and technology use policies
• a safe, secure and monitored network
• preparatory discussion about the lesson to set students’ expectations for the programs or sites they would use
• in-class monitoring of the sites that students are using.

“I educate students both from a victim’s perspective as well as an offender’s perspective” (Teacher).

“They were very attentive to our local police officer who is excellent on the dangers of cyberbullying, Facebook and sexting” (Teacher).

7.6 Impact of digital technologies on student learning

Finally, the teacher survey asked whether teachers believed that digital technologies had any impact on student learning outcomes (positive or negative), and whether they had any evidence of this. The most common theme in teachers’ responses was one of student engagement with technology (e.g. because they are comfortable with and enjoy technology, and because it can give relatively instant feedback and information), which enhances the motivation to learn.

“Students have wonderfully creative minds when given technology” (Teacher).

“The internet provides students with knowledge and ideas that cannot always be given by the teacher” (Teacher).

Concern was expressed about teaching having too heavy a reliance on technology (‘doing the work for us’), and the deleterious effect of texting on writing and spelling.

It was also suggested that excessive use of technology could shorten students’ attention spans (and that they needed more graphic stimulation), an argument countered by the view that increased motivation to participate in interesting and purposeful learning activities would prolong student engagement.

8 Opportunities for aligning in and out of school contemporary literacy practices (student perspective)

During the period of the research, students looked at the technologies they currently used and the purposes for which they used these technologies, and generally struggled to translate the functionality of these devices to an educational setting. Consequently, they saw an iPod as a device for listening to music – not a tool for engaging with educational apps or as a ‘portable’ access to the internet. They saw gaming purely as a fun recreational activity, not a fun problem solving tool. This meant that when they were asked about how the technologies they loved and used on a regular basis in their ‘out of school’ life might also be used in learning, the initial response from most students was one of confusion.

Through a facilitated discussion, students began to think about the potential for using current technology in different ways – with explicit and meaningful educational purposes and as an enabler of learning that did not impinge on their non-school use of technology.

Then they were asked to vote on whether they would/would not like to use each technology in their learning. Once they had had an opportunity to think about some of the educational possibilities offered by the use of technologies, students were keen to use these in their learning, with 94% of students wanting to use gaming technologies and mobile devices in learning, and 88% saying ‘Yes’ to use of social media in learning (Table 6).

Table 5. Students interested in using social media, gaming and mobile devices in the classroom.

<table>
<thead>
<tr>
<th>Yes I would like to use ... in learning</th>
<th>Number of students in workshop</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>135 students (from 7 schools)</td>
</tr>
<tr>
<td>Social media</td>
<td>88%</td>
</tr>
<tr>
<td>Gaming technology</td>
<td>94%</td>
</tr>
<tr>
<td>Mobile devices</td>
<td>94%</td>
</tr>
</tbody>
</table>

8.1 Social media

Workshop discussions about the use of social media in learning concentrated on Facebook, Twitter, YouTube and Skype, with (depending on students’ familiarity with other social media) occasional references to Google Friend, MSN, Tumblr, Textie, MySpace, Nings and Instructables.

Students identified a number of positive applications of social media for learning:
• As a way of extending discussion beyond the classroom walls
• As research tools with instant access to a much wider range of information
  – Skyping with students in other schools in Australia or overseas
  – following topics via Twitter
  – chatting with an expert online
  – using Facebook for study groups
• Learning particular skills through watching or direct communication
watching instructional videos on YouTube (e.g. cooking, science experiments that the teacher doesn’t have equipment for, calculating mathematical equations)

- Skyping with students overseas to learn languages and other cultures

For managing their learning
- timetables and lesson plans on Facebook or Twitter
- being able to keep in touch with school if you were ill or absent

“YouTube can be used to watch educational videos. They help you understand if you don’t understand the teacher” (Student).

“Facebook and Twitter could be used in school to find out more about assignments, or to ask each other about assignments” (Student).

“Twitter to follow journalists, sports people, politicians and scientists” (Student).

“Learning in different ways makes it more fun” (Student).

The possible downsides to use of social media in learning, and there were many voiced during the discussions, included a very strong desire to contain a clear delineation between home and school:
- not wanting to ‘friend’ teachers on Facebook (a comment echoed by the teachers)
- not wanting school to be 24/7
- Concern about kids who don’t have access to the internet at home
- increased risk of or exposure to cyberbullying
- the ‘dumbing down’ of education (e.g. loss of face-to-face socialisation skills, loss of handwriting skills).

“I’m worried that if we incorporate social networks into school it will merge too much into students’ personal lives. To be honest, I would rather not have my teacher on Facebook” (Student).

Across all seven schools participating in the facilitated discussion, 88% of participating students concluded that they would like to use social media in learning. Those who said ‘no’ to having social media at school were driven by a desire for stability, familiarity and comfort with their understanding of education.

“Why can’t school just stay the way it is? Why does it have to change?” (Student)

8.2 Gaming technology

Students easily identified many games with possible educational applications:

- Terraria could be used for design
- Infamous for building on morals
- Minecraft for art and design, architecture and geometry
- World of Goo for physics
- Little Big Planet to create levels that other people could play and rate
- Fruit Ninja for reflex skills
- Wii Fit for sport
- The Sims for analysis of people socialising
- Mario Kart for driver education
- Wii drawing pad
- Nintendo DS brain training, memory and concentration games
- Car Town for money management
- Farmville for farm and stock management
- Age of Empires for history
- Chess to develop logic skills and memorisation

“Computers can be used to learn every single subject in the school curriculum” (Student).

Some of the Year 9 students elaborated on their responses (e.g. Call of Duty for maths – arms count, sniper angles – learning about war, or if you wanted to go into the army or navy). They saw the potential for both development of specific learning skills as well as generic problem solving and creative skills that have application across many curriculum areas, as well as in ‘real life’.

The possible downsides of gaming identified by the students were:
- games being a distraction from learning
- games not having the educative value
- gaming might not be a learning approach that everyone enjoys
- being able to draw a distinction between study and play (or their free time)

“Only include games where it can be engaging and educational” (Student).

“Gaming is supposed to be getting away from work, not creating more” (Student).

Overall, 94% of students said that they would like to use gaming technology in their learning. The students who did not want gaming wanted to keep the separation of the school and home.

8.3 Mobile devices

As a result of the facilitated sessions, students realised that the ‘mobility’ of devices such as mobile phones, iPods and iPads was in fact a feature that could be useful in their learning, and that these devices had educational applications. They suggested mobile devices would:
- include digitally stored text books on a mobile device (‘saves our backs’)
- include podcasting
– record lessons for revision
– listen to a professional about a subject that you are learning
– listen to another language you are learning

- offer immediate access to the internet/resources at all times for research, revision and learning new information/concepts
- enable recording of your learning or reflections (using camera and video/audio recording functions)
- provide access to a range of learning resources on the one device e.g. calculator, GPS, calendar, organiser
- enable students to do homework on the bus, creating more free time at home (time management)
- allow the students to be more creative e.g. creating music and videos.

Ninety four percent of students in the workshops said that they would like to use mobile devices in learning.

8.4 Concerns with using social media, gaming and mobile devices in the classroom.

There were to varying degrees some concerns identified by the students with using social media, gaming and mobile devices in the classroom:
- the ‘dumbing down’ of education.
- technology can foster ‘laziness’
- the loss of the joy of reading ‘real’ books and the art of handwriting
- maintaining a delineation between personal use of technology and school (with both students and teachers against the idea of Facebook being used for educational purposes if it would mean students having to ‘friend’ teachers)
- losing the fun in their current use of technology (if they did the same sorts of things at school, or alternatively being distracted by fun use of technology)
- the potential for learning to become 24/7
- the social divide that would arise between those students with access to technology and those without
- the cost of technology-enabled learning (who pays for devices, internet access and calls? The state, the school, the family?)
- the educative value of the games/resources
- the current school ICT infrastructure’s ability to cope with increased technology use especially internet access
- increased risk of, and exposure to, cyber bullying
- technology not being able to cater for all learning styles.

- achieving the right balance in the use of technology

Students voicing their opinions (quotes):

Social media
- I do like the idea of having social media in schools, but I am concerned about cyber bullying.
- No social media because Facebook is meant to be fun.
- To be honest, I would rather not have my teacher on Facebook.
- You need time off school.
- I would not like to be expected to go on Skype outside of school as I am very busy. This would disrupt my organisation. I like YouTube in class sometimes.
- I am concerned we will get hassled by teachers in our free time (e.g. teacher trying to Skype you).
- How do we maintain privacy?

Gaming technology
- I always thought games could come in learning. You would really learn a lot from them. You can learn from simple things like drawing and art to big things like business.
- I was surprised how many games could be used for educational purposes.
- Games would need to be good quality.
- Don’t want to use gaming all the time – only some of the time.
- Gaming could be good, but there is the factor of getting easily distracted.
- The consoles might be damaged and who would pay for it?
- It would be a concern that if there is a lot of gaming it may be boring to others who don’t like gaming.
- Students will spend too much time playing games with the excuse that it is ‘for school’.

Mobile devices (ipads/ipods, mobile phones)
- It’s better to use iPads or laptops during the class than books because you can research faster.
- I think that recording classes is good, and phone use, but not things like Facebook.
- I haven’t thought of podcasts before, and the idea of using them at school interests me and should be good.
- Certain educational apps could be really helpful
- Unsure. I actually like books .... I don’t want books to be replaced!
- Not phones, because it will cost.
Internet/bullying using technologies

- Concerned about the increase in internet downloads.
- Even though all the devices would be great, we need much faster and better internet.
- I do like the idea of having social media in schools, but I am concerned about cyber bullying.

General student quotes

- I want all this to happen before I leave school.
- It would help attendance in schools.
- I think we should take advantage of the opportunities technologies offer.
- Technology might become boring.
- Technology is only good for some learning styles. It doesn’t replace teacher help.
- Using laptop at school all the time might not be too good for our health.
- If technology failed then you would lose stuff which might be valuable to you.
- Yes technology has lots of benefits, but we can’t just rely on it. We still need to be able to write and socialise.
- Has to be core, not extra or at home.
- People may dehumanise if they don’t interact with others.
- People may stop interacting with others, and more anti-social behavioural problems could occur.
- Bit concerned that for sport (etc.), if we use technology for classes it’s all inside. I would pick being able to go outside for learning class over technology.
- Kids could get easily distracted.
- What about the kids low on money? They’d be more disadvantaged.
- From all the energy being used and how much money it would cost.
- Why can’t school just stay the way it is?

8 Summary

The students involved in the Contemporary Literacy Practices research appreciated the chance to have their say about future educational directions. They helped to paint a picture of Year 9 students’ current use of technology at home for education, socialisation, recreation, relaxation and communication purposes and their recommendations for use of technologies in school.

The Top 5 (favourite) devices used by Year 9 students out of school hours were – computers, mobile phones, television, iPods and gaming consoles. Whilst boys favoured gaming technologies, girls were higher users of mobile phones. Year 9 students tended to use more than one device at any one time and usage was higher out of school hours.

The main difference between the school and home technologies related to standard functional digital technology used in schools (e.g. projectors, IWBs) and recreational technologies used at home (e.g. gaming consoles, music, Facebook and iPods/iPads (Figure 7).

Through facilitated discussions, students were able to reflect on the possibilities for using technology in learning, and expressed an interest in seeing greater use of the technology they love and use as an enabling part of their education.

In saying this, however, students noted two overarching qualifications. The first was that students want to be able to differentiate their personal use of technology from use of technology in/for learning (‘don’t infringe on my personal space and time’ – Student quote). Therefore, any use of technology in learning must be relevant and purposeful – not tokenistic. The second is that many students’ ‘Yes’ votes were qualified to exclude specific technologies (e.g. some students were comfortable using social media for learning as long as this did not include teachers ‘friending’ them on Facebook).

The students also voiced concerns with the cost of technologies affecting accessibility, long term effects of high technology use on socialisation, the novelty of the technologies wearing off, social equity (with some students able to afford more/better devices), access to online resources (as internet access may be limited or slow) and fear of growing cyber bullying using these devices as usage increases.

The students were able to articulate that the effective use of technologies can support them to communicate, collaborate, create, solve problems, access new knowledge, form learning communities, and link to knowledge experts.

Some suggested uses of technologies for learning including gaming for acquiring subject knowledge such as Age of Empire for History; social media for

Figure 7. A pictorial representation of technologies used at home (left) and in school (right) (Created by Year 9 students at Doncaster Secondary College)
cross school discussions and following subject experts through Twitter, and using mobile devices to access the internet and learning resources.

Facebook was the main forum in which digital bullying occurred, with texting, instant messaging and mobile phone calls also used in bullying. At 43% the rate of girls being cyber bullied at any time was more than twice the rate at which boys experience cyber bullying (18%).

Teachers in the research noted that an effective approach to responsible use of technology at school involved increasing their own and their students’ understanding of the school’s cyber bullying and technology use policies and using secure school networks. The Department of Education and Early Childhood Development Learning On Line website (http://www.education.vic.gov.au/cybersafety ) provides additional information for schools on cyber safety and educating young people to be safe and responsible users of digital technologies and social media tools.

9 Conclusions

It is difficult to talk about literacy in contemporary times as if it were a stable thing in the way that we could in the past. Traditionally, being literate meant being able to read and write text and both invest meaning in and understand these texts. The extent to which someone could read, write and make meaning of increasingly complex and challenging written texts implied movement along a continuum of knowledge and know-how. Perhaps being literate in contemporary times continues to be about reading, writing and making meaning of ‘texts’ however the concepts of ‘text’, ‘reading’ and ‘writing’ need to be expanded to accommodate the multitude of ways in which meaning can now be created and shared.

We must help our digital kids balance the individual empowerment of digital technology use with a sense of personal, community, and global responsibility. School is an excellent place to help kids become capable digital citizens (Ohler, J 2011)

The opportunities for the use of technologies in learning are boundless. The challenge remains in identifying / developing effective pedagogy that will enhance student outcomes (cognitively demanding, scaffolded, personalised, multi-skilling) and maintain engagement; and at the same time keep learners safe and informed. The use of social media specifically Facebook and Twitter warrants further investigation to explore the potential of such technologies without encroaching on student privacy and maintaining a comfortable distinction between the students school and home life.

This Contemporary (digital) literacy of Year 9 students project and other similar research projects, such as the Contemporary (literacy) practices of Preps project conducted in 2011 (DEECD 2012) will continue to shed light on what capabilities learners bring to school and more specifically to questions such as:

- what collaboration skills should we expect of students at the primary and secondary school levels?
- how do students become better collaborators as they age — or do they?
- how should we measure a student’s creativity, innovation, critical thinking, or ability to solve problems or make decisions in today’s age?
- is problem solving a generalized skill, or is it different depending upon whether you are trying to solve, say, a math problem or a political problem online or in text form?
- how do you assess how students think, not just their performance? The only way to answer these questions is by making serious attempts to measure contemporary skills (ATC21S, 2010, p. 3)

Knowing the skills learners will need in the 21st century is necessary but not sufficient. How can we tap into the affordances of digital technologies to develop these skills?

The technologies identified by Johnson et al (2011) to attend to

- in the near term are: Cloud computing and Mobile devices;
- in the intermediate term, 2-3 years, are: Game based learning and Open content, and
- in the longer term, 4-5 years, are: Learning analytics, which include a wide variety of ‘data gathering tools and analytic techniques to study student engagement, performance, and progress in practice, with the goal of using what is learned to revise curricula, teaching, and assessment in real time’, and Personal learning environments (PLEs), which refers to ‘student-designed learning approaches that encompass different types of content — videos, apps, games, social media tools, and more — chosen by a student to match his or her personal learning style and pace’.

The implication of these trends, challenges and predicted developments is a compelling need to incorporate digital technologies into mainstream teaching and learning activities, across the curriculum. It also suggests that educators will need to engage in a significant program of professional learning if they are to be sufficiently equipped to
work with and via such technologies – the challenges are both technical and pedagogical.

10 References


DEECD (2012) contemporary (literacy) practices of Preps Final report.


## Appendix A – A day in my digital life

<table>
<thead>
<tr>
<th>Time</th>
<th>I am now</th>
<th>I am with</th>
<th>I am using</th>
<th>I am using it for</th>
<th>I stopped using it because</th>
<th>No. of texts sent/received</th>
<th>No. of calls made/received</th>
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Today is: _/__/2011

Name: ________________________
School name: ____________________

**Notes:**
- Monitor my internet access – yes/no
- Monitor my phone access – yes/no
- Pay my mobile phone bill – yes/no

---

**Digital technology:**

- Computer
- Digital camera
- Digital music
- Digital music player
- Dvd/Dvd player
- Game
- Mobile phone
- Other

---

**Technology used today:**

- TV
- Computer
- Digital music
- Digital music player
- DVD/DVD player
- Game
- Mobile phone
- Other

---

**Technology used at home:**

- Computer
- Digital music
- Digital music player
- DVD/DVD player
- Game
- Mobile phone
- Other

---

**Technology used to get to school:**

- Computer
- Digital music
- Digital music player
- DVD/DVD player
- Game
- Mobile phone
- Other

---

**Technology used to get to school:**

- Computer
- Digital music
- Digital music player
- DVD/DVD player
- Game
- Mobile phone
- Other
Appendix B – I couldn’t do without my...
Appendix C – Dangers of digital technologies

exploring
some of the dangers
of digital
technologies

Q1. I have been bullied or picked on by others using digital technologies
   ✔️ YES □ NO □
   ✔️ Every now and then but it’s not a problem for me □
   ✔️ Quite often and I really hate it □
   ✔️ Several times and it’s annoying □
   ✔️ Everyday and I wish it would stop □

Q2. The digital technologies that have been used to bully me are...
   ✔️ Facebook □ MySpace □ Instant Messaging □
   ✔️ Twitter □ Texting □ Emails □ Image sharing □
   ✔️ Mobile phone calls □ Other □

Q3. The only times I’m made to feel really uncomfortable with digital technologies are when...

□ I want help □ and will talk to a teacher or the counsellor

□ I will contact Kids Helpline on 1800 55 1800
Appendix D – Teacher survey (technology use in the classroom)

This survey explores your current use of digital technologies in the classroom, and how comfortable you feel in using them in teaching and learning.

<table>
<thead>
<tr>
<th>Teacher survey</th>
<th>School name</th>
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<tbody>
<tr>
<td>I teach students in Years (circle): 9, 10 and/or 11</td>
<td>(please circle)</td>
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<td>8-9</td>
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</table>

1. How do you feel about the use and integration of technology in your classroom?

2. What do you see as the barriers to using technology in the classroom?

3. Which of the following technologies do you use regularly in your classroom?

4. How do you assess the effectiveness of technology use in the classroom?

5. What are your goals for integrating technology into your teaching?

6. How do you plan to use technology to enhance learning and student engagement?

7. What challenges do you face in using technology in your classroom, and how do you overcome them?

8. How do you think technology can support student learning in your classroom?

9. What technology do you think is most effective for supporting student learning in your classroom?

10. What are your plans for incorporating technology into your teaching in the future?