

# Connecting People

Digital Learning Platforms  
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# Foreword

The *Melbourne Declaration on Educational Goals for Young Australians* (MCEETYA, 2008) has two clear goals:

1. Australian schooling promotes equity and excellence.
2. All young Australians become successful learners, confident and creative individuals, and active and informed citizens. To be successful learners young Australians are to be ‘creative and productive users of technology, especially ICT, as a foundation for success in all learning areas’.

For many years Victorian students have had access to a range of technologies from laptop and desktop computers, to interactive whiteboards and school intranets. Digital learning platforms join up technology use by providing spaces for accessing and storing digital materials; tools for communicating, creating and collaborating; and access to data that can track progress in learning. The research reviewed in this paper, the second in the series, shows that students develop social, cognitive and technical skills through using these tools. Teachers and parents also experience greater connection, through sharing expertise and information, and communicating across the boundaries between home and school.

Young people are avid users of the internet, social networking sites and mobile technologies. With the Ultranet, the digital learning platform designed specifically for Victorian government schools, students, parents and teachers are able to connect within and across their communities in a safe and secure online environment.

Through use, they develop ‘digital literacies’, including the ability to make critical decisions about online material, how to network safely with others, and what information they should make publicly available.

*The Digital Learning Platforms Research Series* has been developed to provide Victorian, national and international research evidence to support schools in making the most of the available tools, particularly the Ultranet. Later papers will report on the research and evaluation of the Ultranet itself.

I trust you will find this series of publications useful in making the most of its potential for success in learning.



**Chris Wardlaw**  
Deputy Secretary  
Office for Policy Research and Innovation



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# 1 Overview of Digital Learning Platforms Research Series: Papers 1-5

*Expanding Horizons* provides an introduction to digital learning platforms and their functionality, making specific reference to the Ultranet. It presents a model showing the elements within a learning platform and highlights some of the ways these elements can be used to enrich teaching and learning.

*Connecting People* examines the communication functionality of learning platforms, and explores the benefits and challenges of supporting independent learning and collaborative practices. The value of learning platforms includes their ability to enable social networks and educational communities to be fostered in ways where there is an emphasis on creation rather than consumption, and on the decentralisation of content and control (Becta, 2007c). This paper explores the connectivity offered through Web 2.0 technologies in learning platforms (such as chat, messaging, blogs, wikis and forums), and discusses the implications of these for the educational opportunities of students, parents, teachers and the broader community.

*Assessment in online learning environments* focuses on the potential for learning platforms to improve assessment practices. The paper examines current teaching and assessment practices, and the use of e-assessment, digital portfolios and other data to help students, teachers and parents monitor progress and achievement. It shows how information and communications technology (ICT) and Web 2.0 tools have been used to improve both formative and summative assessment practices. The paper also highlights ways that learning platforms can assist teachers to assess '21st century skills' such as problem solving and higher order thinking skills.

*Flexible learning* looks at how learning platforms can support a variety of approaches to teaching and learning, in and beyond schools. With new conceptions of time and space, flexible learning recognises that learning experiences can be planned and organised, or spontaneous and opportunistic. This paper explores evidence showing how the resources, tools and flexibility to access the learning platform at any time and from anywhere, along with the development of teachers' and students' capabilities, catalyse changes in learning and teaching.

*Professional learning and practice* reviews approaches to professional learning that support educators to learn through technologies in order to use them effectively to create a range of learning environments. It recognises that learning platforms themselves do not bring about improvements in educational quality simply through their installation. It is the strategic and thoughtful use of the tools that brings benefits to both learning and teaching.



## 2 Introduction

The first paper in the Digital Learning Platforms Research Series, *Expanding Horizons*, describes the elements of learning platforms and their functionality. This paper focuses upon how learning platforms and the technologies that sit within them have been used to connect students, teachers and parents anywhere and at any time. This paper reviews people's experiences with technologies and Web 2.0 applications such as social networking sites, wikis, blogs and podcasts, and explores the opportunities for learning and teaching in a digital environment. In doing so, it draws on recent national and international evidence to investigate the benefits, risks and educational capabilities of learning platforms enabled with Web 2.0 technologies.

The term 'learning platform' is used to describe a range of integrated online tools that can be either intranet or internet-based. These tools can include web pages, email, message boards, text and video conferencing, personal or shared calendars, communication spaces, as well as assessment and management tools. A repository enables storage and provides access to digital resources. The aim of most learning platforms is to provide an online learning environment that supports quality learning and teaching, and connects students, teachers and parents anywhere and at any time.

Social interactions and social connections play a critical role in the development of cognition. Vygotsky (1997, 1978) believed that individual consciousness is built from outside through relations with others. That is, development of cognition occurs in relationships whereby collaboration and dialogue are necessary for organising and developing thought and human activity (Ashton & James, 2008; Vygotsky, 1997). Today, learning and knowing are understood as cooperative, communicative and interactive activities, where, together, adults and children make sense of the world (Ashton & James, 2008). In a school setting, social and collaborative learning is a joint intellectual effort by students, or students and teachers together. With the advent of technologies such as Web 2.0 and learning platforms, new opportunities for collaborative learning have emerged. In particular, with Web 2.0 functionality, social networks, educational communities and relationships can be fostered to develop students as creators of knowledge rather than simply as consumers of information (Downes, 2007). These new technologies allow young people to express themselves, to socialise and connect in novel and engaging ways, and to learn both independently and collaboratively.



### Web 2.0

The term Web 2.0 refers to online applications designed to facilitate communication, information sharing and collaboration on the internet. Web 2.0 applications are often freely available and allow for the use of rich multimedia. They are designed so that they do not require specialised technical skills or knowledge to use them.

Web 2.0 applications allow content to be published online almost instantly. Web 2.0 applications can be effectively used in classrooms to provide rich opportunities for communication, creation and collaboration. Depending on the specific program, teachers and students can share information, create their own content, connect with others, work collaboratively, organise information, and provide feedback to each other.



Learning platforms enable students to extend their formal learning beyond the classroom and the school (Becta, 2009a) and to access and share a vast amount of information (Cych, 2006; Resnick, 2006). They provide opportunities for students to playfully explore, experiment, design, and invent (Resnick, 2006). Importantly, they also allow teachers to collaborate, and share professional practice and knowledge with colleagues within and outside the school community. For these reasons, current research suggests that learning platforms combined with Web 2.0 technologies will contribute to the transformation of teaching and learning (Redecker, Alla-Mutka, Bacigalupo, Ferrari & Punie, 2009).

In particular, Redecker and her colleagues argue that learning platforms promote pedagogical innovation by enabling teachers to become designers, coordinators, moderators, mediators and mentors, while students assume the role of peer teachers – supporting each other and jointly creating the learning content and context. Table 1 illustrates these new roles and the characteristics of learners using communication technologies, as identified in research by Redecker et al. (2009:24).

**Table 1: Characteristics of new digital learners**

<b>Society</b>	Ubiquity of information and communication technology (ICT) Ease of access and use Information overload
<b>Learner's ICT Usage</b>	Technologically savvy, preference for electronic environments Technology is a need Multiple media usage, multimedia orientation Connected, always on Shallow understanding of technology, lack of critical skills Multimedia oriented
<b>Personal Attitudes</b>	Active involvement, constant engagement Very creative, expressive
<b>Cognitive Patterns</b>	Non-linear, less textual, less structured Multimodal, visual, dynamic representations Discontinuous Cognitive overload Distracted
<b>Working Attitudes</b>	Less fear of failure, risk takers Instant gratification, impatient Not looking for the "right answer" All information is equal, surface oriented Multitasking
<b>Social Attitudes</b>	Extremely social Need sense of security Egocentric, striving to be independent Feel a sense of entitlement

## 2.1 Young people's use of technologies

Children and young people have embraced technologies for learning and social interaction. They create and publish video clips; collaborate on global projects; compose, record and release music; edit photos; and share their creations with audiences worldwide (Green & Hannon, 2007). Young people around the world regularly post videos to YouTube and GoogleVideo; upload photos to Flickr; and link back to their friends on MySpace, Facebook or Bebo (Cross, Richardson, Douglas & Vonkaenel-Flatt, 2009). These same technologies link students into collaborative networks that facilitate the joint production of content and offer peer support, feedback and assistance (Redecker et al., 2009). In particular, they enable students to learn together in novel ways while providing democratising, rewarding and illuminating experiences (Green & Hannon, 2007). As such, these technologies need to be seen not simply as information machines, but also as a new medium for teaching, learning and collaboration (Resnick, 2006).

The generation which grew up surrounded by digital media (roughly referring to individuals born in the early 1980 or later) display different learning styles from previous cohorts. These learning styles are complex and are usually shaped by ubiquity, accessibility and ease of use of digital resources (Redecker et al., 2009). Compared to previous generations of learners, they are digitally literate, they think more visually and in a non-linear manner, they practise multitasking and give preference to multimedia environments. They are continuously connected with their peers and 'always on'. In learning environments they are easily bored, need a variety of stimuli not to get distracted, are impatient and expect instant feedback and rewards. They are social, team spirited and engaged, goal oriented and pragmatic, and expect appropriate (learning) resources to suit their individual needs. To come to terms with the information overload of the digital era, they need to employ learning strategies that involve searching, sieving, managing, re-combining, validating and contextualising information (Redecker et al., 2009:23).

Research evidence on the use of digital technologies suggests that young people are increasingly becoming connected and mobile. They are progressively becoming skilled at multitasking, they are social and interactive, and results oriented. They are better able to select the appropriate technologies for their own personal learning needs, and find and match different tools and social networking applications to build communities of interconnected learners (Redecker et al., 2009).

The prevalence and use of digital technologies (i.e., computers, laptops, notebooks, iPhones, smartphones etc.) in Australia is increasing (Australian Bureau of Statistics (ABS), 2009a). A study by the Australian Communications and Media Authority (ACMA, 2008) found that 98 per cent of Australian households with young people had computers and 97 per cent had mobile phones. These technologies allow users to overcome the restrictions of space and time by creating a virtual presence where they can connect, exchange and create.

Research by Moyle (2010) found that Australian students are widely using technologies outside of school. Students reported that they most often used technology to build and expand on ‘what the teachers are teaching’, to communicate with other students and discuss the learning content, and to ‘learn other things at the same time as learning what is intended’ (Moyle, 2010:37). However, many of these students reported that when it comes to the use of digital technologies in school they feel like they are stepping back in time. Moyle (2010) argues that rather than being due to the technologies used by schools, this is more a result of how the technology is used in the classroom.

“One of the key differences between learning that goes on outside the classroom and learning in the classroom is that informal learning is driven by the interests, enthusiasms and passions of the individual. This is the opposite of the approach in schools; too often teachers assume they know what children are interested in” (Green & Hannon, 2007:55).

## 2.2 Internet use

The number of people and households in Australia with access to the internet has increased substantially in the last ten years (ABS, 2009b). Between 1998 and 2008-09, household access to the internet quadrupled from 16 per cent to 72 per cent. In addition, in 2008-09 broadband internet connections were accessed by close to two-thirds (62 per cent) of all households, and by 86 per cent of those households with internet access (ABS, 2009b).

“The internet is a massive resource of information...It is a fantastic place to meet people and find support, friendship and happiness as well as a wealth of information as long as reliable sources are used. It is recently being used as a way to let people read rare books that they normally wouldn’t find in the local library or bookshop. It’s also a place to learn a massive amount about hobbies that you would normally have not much information about” [Student] (Byron, 2008:22).

In the 12 months to April 2009, the ABS (2009b) found that 2.2 million children accessed the internet either during or outside of school hours. Home access was reported as the most common site of internet use (92 per cent), followed by school (86 per cent). Eighty-five per cent reported they use the internet for educational activities, and 69 per cent reported using the internet to play online games (ABS, 2009a; ABS, 2009b). The proportion of children accessing the internet also increased by age, with 60 per cent of 5 to 8 year-olds compared to 96 per cent of 12 to 14 year-olds (ABS, 2009b). Patterns of internet access and use, and children’s attitudes to the internet however, change as they get older (Moyle & Owen, 2009).

**Table 2: Age related patterns of use and attitudes to the internet**

7-8	9-11	12-16	17+
Net discovery Usage growing		Net exploration and excitement Usage peaking	Net resource and proficiency Social networking declining slightly
Primarily 'fun' Also some homework/research Usage and exploration increasing		Primarily research and communication, but also 'fun' Friends and socialising online important	Primarily research Then communication and small amounts of gaming unless a committed gamer
Initially basic parental concerns Growing safety concerns Parents may not be up to speed with behaviour and activity however Greatest parental influence and impact		Parental concerns increasing due to increased exploration, socialisation 'Teenage' concerns and relationship change Peer pressure concerns	Still some parental concerns But greater trust and belief in sensible behaviour
		Parental concern peaking	
			Parental influence and knowledge decreasing

Source: Byron, 2008:44

Access to the internet in Victorian government schools has significantly increased with the rollout of the VicSmart broadband network. This network provides schools with a fast and efficient internet connection and improved access to online learning resources and teaching materials.

The usage and attitudinal patterns of students and their families are likely to prepare them for learning platforms such as the Ultranet. Primary school students' regular use of the internet is higher at school than at home, and secondary school students' use of computers and the internet is more regular at home than at school (Moyle & Owen, 2009). Internet usage peaks in the early to mid-teens when there is a shift from using a limited number of websites for fun, to a much broader exploration of the internet, and increased usage of websites for homework and for communicating with friends through Web 2.0 applications (ABS, 2009a; ACMA, 2009a, 2009b; Moyle & Owen, 2009).

"I mainly use the internet. The things on the internet that I use include MSN, hotmail and MySpace. The reason for going on them is to mainly interact with friends. When I'm doing an assignment, at times I get confused and then I just sign on to my MSN and just ask a friend" [Student] (Moyle, 2010:37).

## 2.3 Use of social networking sites

Like mobile digital technologies, social networking sites have significantly increased in popularity with young people. Social networking sites are websites that enable people to socialise online, send messages to one another, share interests and post information, chat, meet people, and exchange photos and videos. Social networking sites such as Facebook, Club Penguin, MSN Messenger, Myspace and Bebo are part of a larger suite of internet technologies that collectively fall under the Web 2.0 umbrella (Huijster, 2008). These social networking sites facilitate communication, collaboration and content sharing across networks of contacts. They enable people to connect to their friends and peers, send emails and instant messages, post comments in online forums, meet new people and post personal information, which may comprise blogs, photos, videos, and audio content (ACMA, 2009b; Cachia, 2008; Redecker et al., 2009).

Preferences for specific social networking sites vary according to age. Moyle (2010) reports that younger children in Australia prefer Club Penguin and MSN, whereas older teenagers nominate Facebook and MySpace as their preferred social networking sites. The most popular site for those aged between 8 to 17 is MSN, although children's preferences for social networking sites seem to be dynamic, with trends changing from time to time (ACMA, 2009b; Moyle, 2010; Moyle & Owen, 2009).

The majority of young people in Australia aged between 12 and 17, and half of those between 8 and 11, regularly use social networking sites (ACMA, 2009b). Each social networking site has a different focus and offers differing levels of access and protection for users. For example, SuperClubsPlus provides children aged between 6-12, as well as their teachers with a safe place to meet friends and learn together. Consistently, young people report that the main reason they use social networking sites is to 'chat to friends from school' followed by other social interactions with friends (ACMA, 2009a; ACMA 2009b; Moyle & Owen, 2009). Borrowing this functionality for use in education can help to engage young people in their learning.



In examining over 250 studies, Redecker et al. (2009) found that social networking tools:

- support the exchange of knowledge and material
- facilitate community building, providing teachers and students with social environments that offer assistance (emotional) support
- provide increased opportunities for collaboration, allowing teachers and students to jointly develop educational content
- provide new formats for knowledge dissemination, acquisition and management
- allow students and teachers to develop dynamic learning resources and environments of high quality and interoperability
- embed learning in more engaging multimedia environments
- support individualised and collaborative learning processes.

Appendix 1 explores 12 categories of Web 2.0 activities such as blogging, wikis and collaborative editing, and their possible application to teaching and learning as identified by Crook, et al. (2008).

Social networking tools also enable teachers to implement individual learning strategies that are tailored to the preferences, interests and needs of each student. By actively using these technologies and participating within online environments, students can develop numerous skills and competencies, such as self-organisation, communication, collaboration, multi-tasking, and reflexive thinking (Redecker et al., 2009).

Gifted and talented maths students in Years 2 to 6 at Pleasant Street Primary School in Ballarat created a social networking site using a variety of tools such as Ning, VoiceThread, streaming media sites, images, online games and chat, to see whether a social networking tool could provide a differentiated curriculum to advanced students. The end result, their 'Mathsbook', was found to be highly engaging, powerful and challenging for the students, and a valuable teaching and learning tool.



Other social networking sites such as Second Life provide 3D virtual worlds where the user is represented as an 'avatar' – an interactive representation of a human figure in a three-dimensional interactive graphical environment (see <http://secondlife.com/>). These 3D environments are increasingly used by teachers and students for knowledge sharing and collaboration. For example, in Second Life teachers can take their students on a 3D 'virtual field trip' to hundreds of libraries or government institutions across the world. Vista Hermosa Art Center is one example where users can take a virtual trip through the gallery and interact with the art exhibits.

A key element in all learning platforms, including the Ultranet, is the role of the moderator. Research by Harasim (2002) notes the importance of the moderator in the success of online collaborative learning environments where they are responsible for creating and maintaining the social climate and relevance of the environment by observing, monitoring, facilitating and providing information. Within the Ultranet, all collaborative learning, community and design spaces are moderated by the teacher. Therefore, teachers need to review the spaces they moderate on a regular basis to stimulate communication and learning and respond to any inappropriate content and behaviour.



# 3 Learning and achievement

Research suggests that when learning platforms are used in active and creative ways, students can increase their learning and academic achievement (Becta, 2010a, 2009a; Klein & Zimmermann, 2009; Pearson, Green & Gkatzidou, 2008; Redecker et al., 2009). These benefits include an increase in student effectiveness and efficiency, improved verbal, reading and writing skills, greater student engagement and satisfaction, and more positive student attitudes to learning (Becta, 2010a; Becta, 2009a).

Becta (2010a) reported that learning platforms assist students to perform better in national tests; to improve their verbal, listening, reading and writing skills; help them to gather and share information and experiences; help them grasp difficult concepts in curriculum subjects; and make them more likely to stay in education after the age of 16. Research evidence also suggests that learning platforms can be used successfully to enhance student motivation, improve participation and social skills (Redecker et al., 2009). Furthermore, these technologies can contribute to the development of higher order cognitive skills (i.e. reflection and metacognition), increase self-directed learning skills and enable students to better develop and realise their own potential. This research evidence can be categorised into four key areas. The use of learning platforms can improve:

1. Social, cognitive and technical skills
2. Participation and civic engagement
3. Creativity
4. Identity and social connection.

## 3.1 Social, cognitive and technical skills

Several researchers have found learning benefits of online environments for developing students' skills in making judgments about content and other critical evaluation skills (Byron, 2008; Jenkins, 2007). Other benefits include the ability for students to develop 'cultural competencies and social skills', such as appropriation, multitasking, collective intelligence, judgment, networking, and negotiation, which are all highly valuable when working in online environments (Byron, 2008). Moreover, there is increasing evidence that these are the skills children and young people have to develop in order to be successful in the 21st century workplaces (Byron, 2008; Partnerships for 21st century skills, 2009). Table 3 shows some common skills students develop through the use of digital technologies.

**Table 3: Common skills developed through the use of technology**

Social/Personal	Cognitive/Physical	Technical
Communication	Multitasking	Technical confidence
General knowledge	Logical thinking	Content creation
Creativity	Problem-solving	
Collaboration		
Self-esteem		
Parallel processing		
Persistence		
Peer-to-peer learning		
Risk taking		

Source: Green & Hannon, 2007:36

## 3.2 Participation and civic engagement

Learning platforms are beneficial for building or renewing civic participation, generating tolerance, and global understanding (Byron, 2008). Moreover, learning platforms and the internet can help students who might otherwise be limited to face-to-face interactions in smaller communities or in communities in which they have a minority interest (e.g. learning another language or a particular musical style). One of the greatest benefits of user-generated content sites and spaces available in a majority of learning platforms, is that they offer students spaces to ‘have a voice’ and an identity (Byron, 2008; Mitra & Gross, 2009).

“Sharing ideas via online conferencing can be a powerful motivator for both disaffected students to help improve the quality of their work, and for less confident students, enabling them to participate in virtual discussion forums. Discussion forums have the potential to help teachers guide individual students into high levels of learning” (Kitchen, 2006:27).

### 3.3 Creativity

Learning platforms offer multiple opportunities for creative expression and encourage students to experiment with different, innovative ways of articulating their thoughts and ideas. Students can create and manipulate still and moving images, play out new identities, and investigate narratives in ways that were only available to them previously as consumers of books, the theatre or the cinema (Jenkins, 2007). Using digital techniques enables students to develop creative opportunities which include:

- methods of self-expression which are not possible to the same degree in face-to-face situations (e.g., written, musical and visual expression)
- reaching audiences for their productions through social networking sites (e.g., music, videos or animation)
- creating, distributing, sharing and building on each other's ideas and working through user generated content services
- participating in more democratic media environments that support new forms of civic engagement (Byron, 2008; Jenkins, 2007; Resnick, 2006).



### 3.4 Identity and social connection

Learning platforms are places where students can overcome social isolation. One of the key roles of social networking sites is that they provide students with places where they can explore and develop their sense of identity and style, and promote a sense of place (Livingstone, 2008; Northcote, 2008). They are places where students can 'play', by submitting fictitious information about themselves and make believe they are someone else, and can enjoy creative activity with friends (Livingstone, 2008). Young people's presentations of their identity online also seem to be influenced by the friends with whom they are connected at the time (Byron, 2008).

Hron and Freidrich (2003) suggest that online learning environments are enhanced when chat functions are made available as they provide students with opportunities to communicate their emotions as well as their ideas with like-minded people.



Online communities can provide young people with emotional, social and intellectual support. They can be structured as places where students can communicate openly with each other and in ways in which they may feel uncomfortable in the real world. Health bulletin boards and virtual environments have been used by teenagers and adults in such ways (Suzuki & Calzo, 2004; Walker, 2009). Health bulletin boards for example, can enable young people to safely explore their emerging sexuality without the difficulties associated with face-to-face exchanges (Byron, 2008; Subrahmanyam, Greenfield & Tynes, 2004; Hillier & Harrison, 2007).

## 3.5 Independent and personalised learning

Learning platforms encourage and offer numerous opportunities for independent and personalised learning. Independent and personalised learning is about tailoring the learning to the students' needs, interests and aptitudes. Learning platforms provide students with their own dedicated learning spaces, and add a new dimension and a degree of ownership to the personal learning process (Northcote, 2008). This gives them the opportunity to have a voice, an identity and a choice with regard to learning. Learning platforms are also useful for helping schools to personalise students learning in classes of mixed abilities, and for gifted and talented students. Students who do not contribute very often in class can do so online (Becta, 2009c).

Research suggests that learning platforms increase opportunities for independent and personalised learning through:

Increased choice and diversity of learning resources

- improved quality and range of resources available to students
- teachers have access to a wider range of resources including video and audio clips relating to class work and revision activities
- students are able to choose learning materials that best suit their interests and needs
- students have a greater choice in how and when to engage with (and complete) schoolwork.

Widened access to learning resources

- increased opportunities for students to access and explore the curriculum from home or as part of extension activities before, during and after school
- foster student independence and confidence by giving them more autonomy and responsibility
- support personal study and self-directed learning through access to digital resources during lessons and in the school library
- teachers (and sometimes students) are able to customise their own resource pages to fit the specific needs of students.

Motivating and supporting independent learning

- increased students' motivation, enjoyment and enthusiasm for topics by providing a diverse range of learning resources
- support student reflection, revision and preparation for examinations through the use of revision and quiz materials (Jewitt, Hadjithoma-Garstka, Clark, Banaji & Selwyn, 2010:28-29).

Learning platforms allow students to learn at different paces. For example, posting of videos or podcasts on a learning platform to recap the main teaching points of a lesson can assist students to revisit the parts of a lesson they did not understand, would like to practice, or would like to amplify. To assist in the development of core capabilities such as spelling, the teacher can post a wiki alongside of video footage. Students can access these resources in their own time and at their own pace. Students can also use these tools to show the teacher what they can do. For educators, this investment in the creation and storage of teaching resources means they have at their disposal, a range of valuable materials that can be utilised in following years (Becta, 2009c). For students, such approaches can support problem-based and inquiry-based learning (Jarvela, 2006).



### 3.6 Collaboration and communities

Learning platforms increase and improve collaboration between students and between schools. Internet-based technologies allow young people to collaborate across their school and within partner schools: locally, regionally, nationally and internationally. Students are asking for such possibilities to be included in their learning (Moyle & Owen, 2009; Project Tomorrow, 2010).

As well as improving the collaboration between students and between schools, learning platforms can also boost engagement with parents. Social media, such as blogs, wiki's and Twitter, have the power to lift parental involvement by delivering information more quickly and in contemporary ways, and allowing for two way communications and a dialogue between schools and parents to open up. Masseni (2010) highlights the importance of using social media to interact with parents and the wider school community by pointing to the success businesses have had with using such media. Businesses have been using social media for years to freely and compellingly communicate with their customers and generate word of mouth, yet at schools, social media use is low, with fewer than 39% of principals having a classroom blog or wiki, and only 13% contributing content. Schools, like businesses, can provide information to parents and create a supportive environment where users can interact, offer advice, and discuss school issues in an informal way with the use of online social media.



#### Learning platforms enable group work beyond the classroom walls

“When students are researching a topic on the internet, they can write down what they think about something they have found within a group space on the learning platform. As they write, each word appears live in their group’s page. They can add images and sound, and these will automatically appear on everyone’s screen in the group. Students use the learning platform to communicate with their peers and they can also look at other group pages to see what their peers are doing. Group work started in school can continue for homework when the students go online at home” (Next Generation Learning, 2010).

Ultrahet users can set up either a School Community Space or a Community Space.

- School Community Space – a space for a school to easily communicate with its entire community and share newsletters, calendars or school policies.
- Community Space – a space to support the collaboration of a range of extra-curricular school-based groups such as clubs, sporting teams, committees or other special interest groups.

The Ultrahet similarly enables students and teachers to develop and join collaborative learning spaces. These communities normally exist within or across a network of schools within Victoria (DEECD, 2010). Unlike many learning spaces available on the internet and other learning environments, learning spaces on the Ultrahet are only accessible by the school community and moderated by nominated teachers.

“[Using online web conferencing tools] enabled the sharing of expertise across all schools, which each school alone could not afford. The networking between students reduced isolation and assisted with transitioning [to high school]” (DEECD, 2010).

Lilydale Heights College, located in Melbourne’s outer-Eastern suburbs, is a co-educational college with over 700 students. The college has a strong focus on information and communication technology (ICT) and is a member of the Yarra Valley eLearning Community (YVeLC). The YVeLC is an affiliation of seven schools that aim to collaboratively develop and implement an ‘e-rich’ environment to promote improvement in teacher and school effectiveness.

Prior to the Ultrahet, Lilydale Heights College, in collaboration with YVeLC, implemented Studywiz to develop stronger linkages between teachers, students, classrooms, school administration and the home. Studywiz is a popular learning platform used in many Victorian schools. It provides teachers at the college with a platform that enables them to use existing resources in new and powerful ways.

In particular, teachers across the college and the YVeLC used this learning platform to collaborate with peers and share resources to develop lessons plans and the overall 7-12 curriculum. According to Jodie Smith, Lilydale Heights College eLearning Leader, “Teachers across the network are able to upload and share course materials in one common place and control access and publication of these resources”.

The use of Studywiz has particularly encouraged and enabled teachers to examine how they teach and the ways in which students learn. For example, a teacher identified that a student with a learning disability could more easily undertake and complete assigned work via audio instructions. Subsequently, the teacher developed short audio instructions detailing the requirements and the steps necessary to complete the assigned work. The audio files are uploaded to the learning platform and are accessible to all students, at any time. Students can access, listen to and follow these instructions as often as required at school or at home, and at their own learning pace.

Teachers can also benefit from the learning platform by collaborating and sharing resources. In the UK some schools have found that creating a virtual staffroom is an effective way to introduce a learning platform to staff and other stakeholders. A virtual staffroom is an online community that develops and shares resources and promotes discussions amongst participants. They have been found to work well in both small and larger schools (Becta, 2010c).



In their research Jewitt et al. (2010:41) provide some practical examples of how schools and students in the UK used learning platforms to enhance collaboration:

- opportunities to engage and learn across communities in one school cluster, such as students working on a never-ending story using a wiki, as part of the current focus on writing. Another school took part in pioneering the use of audio broadcasting to support a range of cross-school collaborations on writing
- using digital applications on the learning platform to generate debate on a topic, and preparation of digital presentations and videos to be uploaded on the learning platform to share with others
- opportunities to communicate through blogs and discussion boards, which helped students to develop their abilities to think, discuss, argue, communicate and reason with one another, ask one another questions, identify choices and hone ideas. This contributed to developing a feeling of belonging to a learning community (either at community, school or class level)
- students finding that the sense of distance that a learning platform can afford helped to support critique and difficult commentaries that face-to-face classroom interaction cannot support so easily.





## 4 Bridging school and home

Learning platforms are important in bridging the gap between school and home. They provide new avenues of communication and improve the transfer of information between the school and parents. Importantly, learning platforms support research findings which suggest that the level of parental engagement in a child's education is a key indicator of that child's performance in future years (Finger & Lee, 2010; Izzo, Weissberg, Kasprow & Fendrich 1999; Overstreet, Devine, Bevans & Efreom, 2005). According to UK research, parental involvement in their child's education is the single most powerful predictor of achievement at age 16 (Becta, 2009b). In a majority of cases learning platforms enable parents to access up-to-date, school-based information about their child's attendance, behaviour, achievement, progress and special educational needs. These functions enable parents to learn more about their child's progress while also helping them to identify early on any development or performance issues their child may have (Becta, 2009e). By having access to greater up-to-date information, parents are better able to support their child's learning.

The involvement of parents as partners in learning is crucial to raising standards. Usually their relationship with learning will change as parents benefit from visibility to their child's learning, access to other parents via their own collaborative communities and enhanced communication with the school. Parents usually act as co-constructors of knowledge, experts, audiences and assessors. For example, schools can create a group page on internet safety. Parents are allowed access to various resources and guidance on keeping their children safe online. A discussion forum can also be established to allow parents to share their thoughts and provide feedback on a draft school internet safety policy (UniServity, 2007).

One of the more effective ways for parents to engage in their children's learning is to maintain good communication channels with the school and teachers (Lunenburg & Irby, 2002; Moon & Ivins, 2004). Learning platforms such as the Ultranet facilitate these communication channels. Access to information about their child's progress is fundamental to establishing the basis for parents to be able to have meaningful conversations about their child's learning; both with teachers and with their child (Becta, 2009b).

The learning platform is a great way for children to share work and collaborate with children in other schools. The children are able to continue their learning and share work with their parents. It helps the parents to understand better what the children are doing in school and works to build greater home-school links. The children become more interested in the world around them and enjoy having a platform to share their work and show what they can do (Becta, 2007b).

Research by Jewitt et al., (2010) found that learning platforms can be used in a number of ways to support learning at home and increase parental involvement. In particular, they found that:

Parents were more informed about **their child**

- by using the learning platform to review and support their child's learning
- by having a focus for talking with children about their learning in school
- by becoming involved in setting targets for their child's learning
- parents who are 'remote' from their children (e.g., those working away from home) were able to maintain contact with their child's progress at school.

Parents were more informed about **the school**

- because they were provided with important organisational and logistical information via the learning platform
- because schools used the platform to showcase best practice and exceptional work to parents
- by being consulted via the learning platform about important decision-making and policy development
- parents felt more involved in the day-to-day running of the school
- parents were more able to maintain contact with school news and activities when away from home.

Students were supported to continue learning **at home**

- homework tasks were clearer to parents, enabling them to prompt and support their children
- parents were provided with a clear focus to work with children at home
- students were able to communicate with their teachers and other students while working at home – often in an asynchronous form
- homework tasks were more active and collaborative
- in situations such as learners with long-term illness, teachers' absence or school closure in extreme weather.

Using learning platforms, schools can share current teaching methods and curriculum content with parents. They can provide parents with access to information they require to support their child's learning at home. Schools can engage parents in learning by placing materials, photos, resources and video clips on the class pages so they can see what their child has been doing at school. The school can also give parents tips and ideas to consolidate or extend learning out of school.

“It's lovely – you don't always get to know what they've been up to because they don't always tell you in that much detail. And when I looked [at the learning platform] ... this week there were some photos on there of some of the work that the children have been doing, and that's really nice because as a parent, that's not normally an insight that you would get into the classroom, is it? [Parent]”  
(Jewitt et al., 2010:26).





# 5 Challenges online

Although the internet and Web 2.0 technologies present numerous learning opportunities they pose some risks for children and young people. In 2009, the ABS estimated that approximately 72,000 Australian children and young people had some kind of personal safety or security problems on the internet (ABS, 2009b). An estimated 33,000 children and young people accessed inappropriate material, 15,000 experienced bullying or threatening behaviour, and 15,000 had strangers asking for or gaining access to their personal information (ABS, 2009b).

Typically, young people have high levels of confidence in using technologies however, their knowledge and awareness of the inherent issues, risks and dangers can be low (Green & Hannon, 2007). Most often young people unknowingly expose themselves to danger and engage in inappropriate online behaviour (Byron, 2008; Becta, 2007a). Some of the more common risks include cyberbullying, exposure to illegal and inappropriate material, plagiarising and stealing content owned by others (e.g., video or music), identity theft, privacy and online security.

## 5.1 Common risks

Research into child safety and digital technologies by Palfrey et al. (2008) indicates that anti-social behaviour such as cyberbullying and harassment are the most frequent threats facing young people when online. Cyberbullying is when an individual or group use the internet, mobile phones or other technology to intentionally hurt another person or group of people (Cross, Shariff & Gardener, 2008; Dooley, Cross, Hearn & Treyvaud, 2009). Much of the cyberbullying that occurs among school-aged children happens between peers (Palfrey et al., 2008). Cyberbullying is emerging as a significant risk in Australia with rates of up to 10 per cent reported among young people (Dooley et al., 2009).

Some common forms of cyberbullying:

- Sending threatening or discomforting text messages to a mobile phone
- Making silent, hoax or abusive calls to a mobile phone
- Making and sharing embarrassing images or videos via a mobile or website
- Broadcasting unsuitable webcam footage that is threatening or manipulative
- Leaving hurtful messages on a social networking site or sending the same message to that person's peer group
- 'Outing' people by publishing or disseminating confidential information online
- Stealing an online identity in order to cause trouble in that person's name
- Deliberately excluding people from online games or groups
- Setting up hate sites or hate groups against an individual
- Sending menacing or upsetting responses in chat rooms, online game or messenger 'real time' conversations
- Voting for someone in an insulting online poll
- Sending someone 'sexts' that try to pressure them into sexual acts (Cross, Richardson, Douglas & Vonkaenel-Flatt, 2009).

DEECD provides resources to assist schools and teachers to develop and implement comprehensive student wellbeing and anti-cyberbullying policies:

- [www.education.vic.gov.au/management/elearningsupportservices/www/educate/cyberbullying.htm](http://www.education.vic.gov.au/management/elearningsupportservices/www/educate/cyberbullying.htm)

Privacy is another area that students need to understand. Research by Dooley et al. (2009) suggests that despite the positive attitude to technology, over 75 per cent of young Australian's consider the internet a threat to their privacy. In particular, there are two types of threats to privacy. The first relates to the disclosure of personal information by a student, and the other relates to the posting of personal information about a student by other people, or the alteration of personal information by other people (Henderson, de Zwart, Lindsay & Phillips, 2010). An Australian study on information disclosure on a social networking site demonstrated that peer pressure was a strong motivator for young people to share personal information – 47 per cent of those younger than 14 years, and 41 per cent of those older than 14 years disclosed personal information on the internet because they believed their friends were also doing it (Dooley et al., 2009).

Dooley and his colleagues estimated that 84 per cent of young males and 60 per cent of young females in Australia reported that they had been accidentally exposed to pornography online, while 38 per cent and 2 per cent of young males and females respectively, were deliberately exposed (Dooley et al., 2009). Other forms of inappropriate content include exposure to offensive or violent media, hate groups and content describing and depicting self-harm or suicide. Viewing such content may severely impact on the behaviour of an individual or group (ACMA, 2009d).

The ownership of intellectual property is a key cultural issue in Australia (Grantham, 2009), which particularly relates to what students share in their schoolwork and to downloading music or games. Research suggests that teachers and students develop an appreciation of the intellectual property rights of others when posting content online, and ensure that any images, video or music they incorporate within their profiles or teaching materials are not restricted by copyright (Australian Institute of Criminology, 2008).

There is also a risk that children and young people may become obsessed with a new technology, or spend too much time online, thereby neglecting other relationships and family contacts. The number of hours children and young people spend online can vary between individuals, however, ACMA recommends that everyone must become a critical and discriminating user of online technologies (ACMA, 2009c).



# 6 Personal safety and learning platforms

The Ultranet provides a secure online learning environment for students, teachers and parents. It has strict controls where only certified users have access through a unique username and a password, and the content is monitored and filtered. Beyond school, students have access to the internet and online materials. Therefore, it is important that teachers educate students to be responsible users of technology whether at school or at home.

Student, teacher and parent user resources provide detailed privacy information and articulate clear guidelines for safe and responsible use of the Ultranet. In addition, all users are required to agree to the Ultranet Terms of Service each time they log into the system.

Other strategies that can contribute to building students abilities to stay safe online include:

- Schools providing critical literacy education
- Students keeping personal information private
- Schools implementing Acceptable Use Agreements (AUAs)
- Students, parents and teachers evaluating web materials
- Students and schools using social software safely
- Using chat and instant messaging safely
- Publishing responsibly.

Critical literacy requires teaching students to become cautious and discriminating users of online materials. Research by Becta (2007) suggests that students have to learn to check the veracity of what they find on the internet, rather than believe it without question. Information received through services such as email, chat and social networking sites should not be accepted at 'face-value', but their legitimacy and authority should be scrutinised. Like all media used in schools, critical evaluation of web resources is necessary to determine the reliability, accuracy and currency of the material (Becta, 2007a).

DEECD provides resources to assist schools and teachers to maximise the online learning opportunities for students in the safest and most efficient ways:

- [www.education.vic.gov.au/management/elearningsupportservices/www/default.htm](http://www.education.vic.gov.au/management/elearningsupportservices/www/default.htm)

DEECD provides digital literacy resources:

- [www.education.vic.gov.au/management/elearningsupportservices/www/educate/literacy.htm](http://www.education.vic.gov.au/management/elearningsupportservices/www/educate/literacy.htm)

When evaluating material online, students should ask the following questions:

- Who has published the content?
- Where does the content originate from? It may come from a different source than the person who published the site. Does it have authority? Is it free from copyright restrictions?
- Does the content seem up to date?
- Is the content easy to read and understand?
- Does it present a one-sided point of view?
- Does the content provide everything I need?
- Are the links useful?

Useful resource to evaluate online educational materials:  
[www.libraryinstruction.com/evaluating.html](http://www.libraryinstruction.com/evaluating.html)

“The exploration of student controlled blogs made me realise how responsible students can be with technology and how important student controlled web spaces can be in student learning” (DEECD, 2010).

DEECD provides resources that provide useful tips to maintain privacy while online:

- [www.education.vic.gov.au/management/elearningsupportservices/www/educate/cyberethics.htm#H2N100EF](http://www.education.vic.gov.au/management/elearningsupportservices/www/educate/cyberethics.htm#H2N100EF)

DEECD Victorian Accessible Use Agreements:

- <http://www.education.vic.gov.au/management/elearningsupportservices/www/lead/use.htm>

Criminal use of personal information is a significant concern (ACMA, 2009e). Personal information can be pieced together to construct the identity of a person. ACMA suggests that it is the responsibility of users to keep personal information private. Students who use a social networking site or a chat room service should be careful about how much personal information they reveal. Personal information extends beyond the obvious details such as name, age and location, to information such as extra-curricular activities, names of friends, or details that may be particular to their location. On the Ultranet, students and families information is maintained confidentially.

DEECD requires all schools to develop Acceptable Use Agreements (AUAs). AUAs provide a framework for safe and responsible use of the technologies at school, and can provide guidance for students and parents in using the Ultranet and the internet at home. AUAs cover all school-provided technologies used both in and out of school, such as email, chat, instant messaging, camera phones, webcams, blogs, and social networking sites. AUAs outline safe and responsible behaviours for students, procedures for reporting unsuitable material, and information about protecting the Ultranet and related computer networks (e.g. from viruses).

A survey of 140 Victorian principals and their use of social media (e.g., blogging, email newsletters, Facebook) found that:

- 14% of principals [schools] had a policy for staff and 13% for students on after hours use of social media
- Female principals are 38% more likely to have a classroom blog or wiki than male principals
- 11% of principals have a personal blog (school or private use)
- 32% of principals have an account on Facebook
- 12% of principals use ning (mainly for professional collaboration) (Masseni, 2010).

Research suggests that students primarily use services such as chat and instant messaging at home (ACMA, 2009b). It is important then, that students are aware of the risks and of ways of avoiding them. Becta (2007) recommends that if registration is necessary to use chat or instant messaging services, those looking to use such services should ensure that they give as little personal information as possible, and should look for clear privacy statements stating that the information they provide will not be made publicly available. Users should choose not to appear in member directories or similar, where their details will be made available for all to see (Becta, 2007a). The chat and instant messaging functions of the Ultranet operate within a password-protected environment.

Online content can be viewed, copied, shared and manipulated by a worldwide audience. Research suggests that, with practice, young people do learn how to be responsible publishers within the social networking world. The longevity of online content and knowing that content once uploaded can be viewed and manipulated are important facts for students and teachers to understand and take it into account. A good question to ask young people uploading information to a social networking site is, would they be happy for their parents or a prospective employer to view that information? If the answer is no, students should seriously reconsider what they are uploading.

#### Some useful resources for responsible publishing:

- [www.smartcopying.edu.au/scw/go/pid/821](http://www.smartcopying.edu.au/scw/go/pid/821)
- [www.smartcopying.edu.au/scw/go](http://www.smartcopying.edu.au/scw/go)
- [www.education.vic.gov.au/management/elearningsupportservices/www/educate/cyberethics.htm#H2N10032](http://www.education.vic.gov.au/management/elearningsupportservices/www/educate/cyberethics.htm#H2N10032)

#### Some useful national and international e-safety websites:

- [www.cybersmart.gov.au](http://www.cybersmart.gov.au)
- [www.ncab.org.au](http://www.ncab.org.au)
- [www.bullyingnoway.com.au](http://www.bullyingnoway.com.au)
- [www.childnet-int.org](http://www.childnet-int.org)
- [www.kidsmart.org.uk](http://www.kidsmart.org.uk)
- [www.netsmartz.org](http://www.netsmartz.org)
- [www.digizen.org](http://www.digizen.org)
- [www.chatdanger.com](http://www.chatdanger.com)



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# 7 Conclusion

The development of learning platforms and the introduction of the Ultranet in Victorian schools provides new and exciting opportunities for learning and teaching. Research evidence shows that these technologies are changing the ways in which students and teachers find, create, share and learn knowledge, through rich media opportunities and in collaboration with each other (Redecker et al., 2009).

The benefits of learning platforms are varied. Importantly they enable schools, teachers, students and parents to connect and collaborate, and to improve the coordination of information and communication. Learning platforms extend school-based learning into family settings where parents are empowered and better informed to keep up-to-date and support their child's learning. Jewitt et al., (2010) also found that learning platforms increased collaboration between teachers and schools to pool resources and expertise, and enhanced collaboration between students.

Overall, learning platforms provide new formats for knowledge dissemination, acquisition and management. They increase the accessibility and availability of learning content by providing students and teachers with a wide range of platforms that offer a broad variety of educational material (Redecker et al., 2010). Learning platforms promote pedagogical innovation by supporting learning and teaching practices that encourage both collaboration and personalisation. They further support motivation, participation and reflection, empowering students to develop self-directed learning skills, and helping them to better realise their potential.

Learning platforms and Web 2.0 technologies can raise concerns in relation to students' safety and privacy. Through password protection and other safety mechanisms, the Ultranet provides ways to alleviate these concerns. However, students must be taught to become responsible users of technology and importantly, critical evaluators of online materials and behaviours.



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# 9 Glossary

Some of the commonly used terms and phrases that describe different functions and actions in online environments in this series of *Digital Learning Platforms Research Papers* are described below. Some of these definitions are also available on the DEECD *Technology A-Z* website. See: <http://www.education.vic.gov.au/studentlearning/elearning/technology/wikis.htm>

Asynchronous	Asynchronous transactions occur at any time and do not require a common timing for that communication to occur. People who participate in online environments asynchronously, are not necessarily communicating at the same time.
Avatar	An avatar is a computer user's representation of himself/herself or alter ego, whether in the form of a three dimensional model used in computer games or two-dimension icon (picture) use on internet forums and other communities.
Blended learning	Blended learning refers to the mixing of different pedagogical strategies using including both face-to-face with computer-mediated learning.
Blog	A blog (a contraction of the term 'web-log') is a type of website, usually maintained by an individual who creates entries and can then publish them to the blog immediately. A typical blog combines text, images, and links to other blogs, web pages, and other media related to its topic. Blogs can be private or public and readers can leave comments in response to blog entries.
Chat	Chat in online environments refers to informal online conversations.
Chatrooms	Chatrooms on the internet are places where informal, synchronous conversations are held. It is an online application that supports conversations and user-generated content.
Cyberbullying	Cyberbullying is when an individual, or group, use the internet, mobile phones or other technology to intentionally hurt another person or group of people.
Cybersafety	Cybersafety refers to the ways students keep both themselves and their friend's safe on the internet.
Facebook	Facebook is a social networking website that uses email addresses (corporate, university etc) to verify users as members of already existing social networks and then becomes an online extension of that network. People can send messages and update their personal profiles to notify friends within their networks.
Flexible learning	Flexible learning is a global phrase referring to different styles of learning, including learning with technologies. Flexible learning strategies expand students' choices about what, when, where and how they learn.
Flicker	Flicker is a photo-sharing website that also focuses on the art of photography and encourages and supports the growth of social networks through common creative interests.
Forum	An internet forum is an online place where notices can be posted and responses collected. It is another terms referring to an online application that supports conversations and user-generated content.

Functionality	The functionality of software refers to the set of tasks a software application is equipped to perform.
GoogleVideo	Similar to YouTube, GoogleVideo is a video sharing website where users can upload their own content. It provides access to stock content and a marketplace for music videos, TV episodes and movie trailers.
Instant Messaging	Instant messaging or messaging refers to computer software designed for delivering messages from one person to another or many. The text is sent in common, readable forms, either as formatted or unformatted text. It is also possible to save these texts for later reference. The text is transmitted by devices connected to an IT network.
Learning management system	Learning management systems are software applications designed to support the teaching and learning of students, and the administration, documentation, tracking, and reporting of students' performance. Learning management systems provide teachers with the capacity to upload lessons and online learning activities and for students to access these remotely.
Learning object	A learning object is a web-based a resource that can be used and re-used to support learning. It usually comprises rich multimedia such as animation, audio, video and/or text.
Learning platform	A learning platform is similar to a learning management system. Learning platforms are comprised of an integrated set of interactive online applications that enable teachers, students, parents and others to access information, tools, content and resources to support and enhance teaching, learning and educational administration.
MSN Messenger	MSN Messenger is an instant messaging application that enables real-time text-based communication between users and a network of users.
Moodle	Moodle is the abbreviation for <i>Modular Object-Oriented Dynamic Learning Environment</i> . It is an open source Course Management System (CMS), Learning Management System (LMS) or a Virtual Learning Environment (VLE). Moodle is popular among educators in all levels of education around the world, as a tool for creating web sites for students.
MySpace	MySpace is a social networking website. MySpace offers an interactive, user-submitted network of friends, personalised profiles, blogs, photos, music and video.
Personal learning environment	Personal learning environments are designed for students to be able to control both the content and processes of their learning when online. Personal learning environments include functions that provide students with support to identify and review their own personal learning goals.
Podcasts	Podcasts are audio and/or video files that can be listened to live from the internet or downloaded to a personal computer, Netbook or hand-held devices such as iPods. Podcasts are distinguished from most other digital media formats by their ability to be syndicated, subscribed to, and downloaded automatically when new content is added.

Social networking software	Social networking software supports the building of online communities of people who share interests and/or activities, or who are interested in exploring their interests and activities with others. Most social networking services are web-based and provide a variety of ways for users to interact, such as with email and instant messaging. Popular social networking sites include <i>FaceBook</i> , <i>MySpace</i> and <i>Ning</i> .
Studywiz	Studywiz is a Virtual Learning Environment (VLE) used by many schools and learning communities around the world. It provides an online space where teachers and students can collect, store, organise and manage educational content.
Synchronous	Synchronous transactions occur when people communicate with each other at the same time.
Ultranet	The Ultranet is a digital learning platform specifically designed and built for use in Victorian government schools. The Ultranet provides access to Web 2.0 applications and tools in many of its spaces. The Ultranet will put high quality online tools into the hands of teachers and students that will transform teaching and learning in Victorian schools.
Virtual learning environment	A virtual learning environment is similar to a learning platform. It is a software system created to support the different pedagogical and administrative requirements of teaching and learning in educational settings.
Web 2.0	<p>The term Web 2.0 refers to online applications designed to facilitate communication, information sharing and collaboration on the internet. Web 2.0 applications are often freely available and allow for the use of rich multimedia. They are designed so that they do not require specialised technical skills or knowledge to use them.</p> <p>Web 2.0 applications allow content to be published online almost instantly. Web 2.0 applications can be effectively used in classrooms to provide rich opportunities for communication, creation and collaboration. Depending on the specific program, teachers and students can share information, create their own content, connect with others, work collaboratively, organise information, and provide feedback to each other.</p>
Web browser	Web browsers are software programs used to access the internet from a device, and includes common programs such as Internet Explorer, Mozilla Firefox, Google Chrome and Safari. Learning platforms are usually housed on the internet as this enables them to be accessed outside of the school by opening a web-browser and navigating to the learning platform website.
Wiki	A wiki is a website that allows the easy creation and editing of any number of interlinked web pages via a web browser using a simplified WYSIWYG (what you see is what you get) text editor. Unlike blogs, wikis are typically maintained by a group of people, and can be useful for online collaboration, with contributors able to track the changes or comments made by others. Wikis can be accessible to anyone on the internet, or they can be secured and made open only to invited members.
YouTube	YouTube is a video-sharing website on which users can upload, share, view videos as well as give their opinions on the content.

# APPENDIX 1

## Educational Web 2.0 possibilities

The table below explores 12 categories of activity with Web 2.0 technologies and their possible application to teaching and learning. The websites are indicative of the activities described and are more explicitly educational in design.

### *Categories of educational Web 2.0 activity\**

<p><b>Media sharing</b></p> <p>Sites have emerged that welcome creative digital material organised by educators. An example is the education groups on YouTube (Reteachers) or those made by young people themselves (BBC blast). The more educational media of video and PowerPoint may be shared (Sentation). However, student class notes define one of the most shareable of educational products (Miniciti, Notecentric).</p>	<p><a href="http://youtube.com/group/reteachers">http://youtube.com/group/reteachers</a>  <a href="http://www.bbc.co.uk/blast">http://www.bbc.co.uk/blast</a>  <a href="http://www.zentation.com">http://www.zentation.com</a>  <a href="http://www.miniciti.com">http://www.miniciti.com</a>  <a href="http://www.notecentric.com">http://www.notecentric.com</a></p>
<p><b>Media manipulation</b></p> <p>Graphical representations play an important role in education. Services exist for creating and sharing diagrams (Gliffy). Sections of web pages can be extracted and fashioned into a new web representation (Yoono). Such cloning of resources allows educational mashups, particularly popular among which are themes based on geography – such as linking literature to place (Googlelitrips).</p>	<p><a href="http://www.gliffy.com">http://www.gliffy.com</a>  <a href="http://www.yoono.com">http://www.yoono.com</a>  <a href="http://www.googlelitrips.com">http://www.googlelitrips.com</a></p>
<p><b>Conversational arenas</b></p> <p>Educational conversations can be supported by a variety of generic tools, including some with high bandwidth connectivity (Vyew). Other sites provide more structure and encourage international conversation (Think). For younger learners, the conversation may be set against more engaging visual scenery (Whyville). Chat discussion boards can support homework (Onionstreet). Teachers also can link through discussion forums (Schoolhistory).</p>	<p><a href="http://vyew.com/site">http://vyew.com/site</a>  <a href="http://www.think.com/en">http://www.think.com/en</a>  <a href="http://b.whyville.net/smmk/nice">http://b.whyville.net/smmk/nice</a>  <a href="http://www.bbc.co.uk/onionstreet">http://www.bbc.co.uk/onionstreet</a>  <a href="http://www.schoolhistory.co.uk/forum">http://www.schoolhistory.co.uk/forum</a></p>
<p><b>Online games and virtual worlds</b></p> <p>Platforms now exist for developing multi-player online games (Fablusi). Existing examples have taken ecology and climate as topics (Powerupthegame). Second Life has provided a development space for gifted learners (Schome) while development work for undergraduates is being explored (Vue).</p>	<p><a href="http://www.fablusi.com">http://www.fablusi.com</a>  <a href="http://www.powerupthegame.org">http://www.powerupthegame.org</a>  <a href="http://www.schome.ac.uk">http://www.schome.ac.uk</a>  <a href="http://vue.ed.ac.uk">http://vue.ed.ac.uk</a></p>
<p><b>Social networking</b></p> <p>The mainstream social networking sites typically include education-oriented friendship groups. However, they can also host institutions to establish their own college-based communities (Mynewport). Other sites provide a more explicitly child-oriented design and security service for cross-site collaboration (schoolnetglobal) or simply casual exchange around school interests (Goldstarcafe). Teachers may also be creating such communities (Learnhub).</p>	<p><a href="http://apps.facebook.com/mynewport">http://apps.facebook.com/mynewport</a>  <a href="http://www.schoolnetglobal.com">http://www.schoolnetglobal.com</a>  <a href="http://www.goldstarcafe.net">http://www.goldstarcafe.net</a>  <a href="http://learnhub.com">http://learnhub.com</a></p>

<p><b>Blogging</b></p> <p>Blog hosting sites exist especially for students and teachers (Edublogs). Some student blog collections that are institutionally managed are publically readable; these exist in the domain of undergraduates (Warwick), and primary (Sandaigprimary). Academic publishers are now encouraging scientific authors to blog around their findings (Nature).</p>	<p><a href="http://edublogs.org">http://edublogs.org</a>  <a href="http://www.sandaigprimary.co.uk/pivot">http://www.sandaigprimary.co.uk/pivot</a>  <a href="http://blogs.warwick.ac.uk">http://blogs.warwick.ac.uk</a>  <a href="http://www.nature.com/">http://www.nature.com/</a></p>
<p><b>Social bookmarking</b></p> <p>Some systems for sharing bookmarks are designed more for research and education users (Bibsonomy). Others centre on the collection and shared organisation of research publications (Citeulike).</p>	<p><a href="http://www.bibsonomy.org">http://www.bibsonomy.org</a>  <a href="http://www.citeulike.org">http://www.citeulike.org</a></p>
<p><b>Recommender systems</b></p> <p>The tag clouds thrown up by bookmarking searches can function as recommender resources. An (infamous) example of recommendation technology in education involves user evaluation of teachers (Ratemyteachers).</p>	<p><a href="http://www.ratemyteachers.com">http://www.ratemyteachers.com</a></p>
<p><b>Collaborative editing</b></p> <p>Text, spreadsheets and other documents can be stored centrally and collaborators emailed a URL to permit collaborative editing (Google docs). Other websites incorporate more visual tools for collaborators (Thinkature), some emphasising mindmaps for brainstorming (bubbl.us) or whiteboard simulations (Virtualwhiteboard). All of these tools might be recruited to foster international contact involving classrooms in the UK (etwinning), or internationally (Skoolaborate).</p>	<p><a href="http://www.google.com/docs">http://www.google.com/docs</a>  <a href="http://thinkature.com">http://thinkature.com</a>  <a href="http://www.bubbl.us">http://www.bubbl.us</a>  <a href="http://www.virtual-whiteboard.co.uk">http://www.virtual-whiteboard.co.uk</a>  <a href="http://www.britishcouncil.org/etwinning.htm">http://www.britishcouncil.org/etwinning.htm</a>  <a href="http://www.skoolaborate.com">http://www.skoolaborate.com</a></p>
<p><b>Wikis</b></p> <p>There are sites that allow students and teachers to establish their own wiki, with an educational slant (Pbwiki). Popular wikis are well established with educational emphasis (Wikiversity) or with material for more specialist interests (Knowhomeschooling). Some schools make their student wikis visible (Westwood wikispaces). Other sites invite sharing of expertise but without the wiki structure (Squidoo).</p>	<p><a href="http://pbwiki.com/education.wiki">http://pbwiki.com/education.wiki</a>  <a href="http://en.wikiversity.org/wiki">http://en.wikiversity.org/wiki</a>  <a href="http://knowhomeschooling.com">http://knowhomeschooling.com</a>  <a href="http://westwood.wikispaces.com">http://westwood.wikispaces.com</a>  <a href="http://www.squidoo.com">http://www.squidoo.com</a></p>
<p><b>Syndication</b></p> <p>Students may find many publishing websites from which they can usefully take advantage of syndicated content. Particularly popular syndicated material includes podcasts such as those made for school students (Podcastschool) or sponsored by particular universities (Stanford).</p>	<p><a href="http://podcastschool.net">http://podcastschool.net</a>  <a href="http://itunes.stanford.edu">http://itunes.stanford.edu</a></p>

\*Websites are given as examples only

Source: Crook et al., (2008:24)





