POSSIBLE RESEARCH TITLE / AREA OF INTEREST:
The extent of the Australian adolescents' technology use outside of the secondary classroom in an examination preparation context.

MAIN QUESTION:
To what extent do Australian adolescents use technology outside of the secondary classroom to prepare for an examination?

SUBSIDIARY EXPLORATORY QUESTIONS:

- What are the characteristics of the digital generation and how do they interact with technology when not in a formal classroom learning situation and in particular when they are working independently to prepare for an examination?

- What positive and negative effects is this lifelong immersion and increasing usage of technology actually having on adolescents? Have they developed new sets of skills? Are other skills or abilities then being sacrificed or devolved?

- What are the stakeholders' (students, parents, teachers) perceptions of these technologies and their perception of how students use them?

- Is the technology presenting new challenges for adolescents when preparing for an examination and how can technology be used to support adolescents in the process of preparing for an examination?

BACKGROUND:

Working in secondary school education, initially as a secondary school teacher and now running my own educational consulting business where I develop study skills resources and programs for schools, I have noticed a marked trend in the issues that are troubling the school community with respect to adolescents' ability to learn effectively outside of the classroom and to prepare for their assessment activities. In particular parents are concerned about formal written examination assessments. Although students are assessed through a variety of different activities during the year, it is the written examinations - both internally and externally administered exams, often held at the end of a semester, that are of most concern. Parents are concerned about how students are preparing for this type of assessment and the role of technology in the preparation process. As to whether this particular form of assessment is worthy or effective is a debate for a different paper; it is enough to accept that it is a reality in this current educational climate in Australia where schools are expected to at least partially assess adolescents in this manner.

Concerns about technology in general are also high on the school community's agenda. Parents and teachers are concerned that adolescents are studying with their iPods blaring and are concurrently using other technologies and want to know whether these affect their ability to learn. There are concerns about the amount of time adolescents spend on the Internet and the activities they are undertaking during this time. Adolescents are not only constantly struggling with how to deal with more common distractions such as TV and music, but now also the increasing range of computer-mediated communication technologies and environments: multi-user domains, social networking sites, media sharing and personal publishing opportunities, instant messaging applications as well as constant communication and sharing on non-computer technologies such as mobile phones. This creates continual conflict with parents. The current generation of adolescents has grown up engulfed and immersed in all forms of technology. They are connected 24/7 and have moved on from the Generation Y label to be called the 'Millennium Generation' or 'Net-Geners' or the 'Digital Generation' (Huntley, 2006). These are students who have never known a world without remote controls, CDs, cable TV, mobiles and computers.

What effect is this lifelong immersion and increasing usage of technology actually having on adolescents? Technology allows adolescents to access and interact with wide sources of information in different ways but at the same time is their ability to achieve any meaningful work at home threatened by this use?

‘Technology’ is of course a broad term. Rather than then limiting the forms of technology to communication technologies or computer based technologies, the scope of technology covered is limited only by what is actually used, or not used, by adolescents in their preparation for this type of assessment activity. Therefore initially all forms of technology will be considered but with the focus being on computer based technologies, personal communication technologies such as mobile phones and MP3 players and in particular the use of social software, defined by Futurelab (2006) as the creation of communities and resources in which individuals come together to learn, collaborate and build knowledge. Social software is software that supports social interaction.

The key problematic to examine then becomes: ***‘How and to what extent do Australian adolescents use technology outside of the classroom when preparing for an examination?’***

By understanding the effect of the technological society adolescents live in and the way these adolescents learn and interact with technology, all members of the school community can make changes as needed to ensure that the learning experiences outside of the classroom are effective for these adolescents – especially as adolescents are given more and more responsibility for their own learning. What techniques, styles and approaches to preparing for examinations should adolescents be using at home in order to ensure their success at school and where does technology fit into this equation?

Much of the literature available examines students’ use of technology in a generic sense, in research or homework based processes or as a tool for supporting non-specific learning, not as a tool for examination preparation. Therefore in the following literature review, first the characteristics and their use of technology of these adolescents are examined, then the concerns about adolescents, technology and learning, and the potential advantages of technology use followed by a discussion that arises from these readings.

1. CHARACTERISTICS OF DIGITAL GENERATION ADOLESCENTS

Prensky (2004) divides the world into digital natives, those who have grown up in the digital world, and digital immigrants, those who did not grow up in the digital age and either do not speak the language or perhaps speak it with a distinct accent. Prensky states that due to technology, digital natives are experiencing life in ways that are different from digital immigrants in so many aspects of their experiences: in the way they are communicating, sharing, buying and selling, exchanging, creating, meeting, collecting, coordinating, evaluating, gaming, learning, searching, analyzing, reporting, programming, socializing, evolving, and growing up. This is quite a comprehensive list and certainly gives an indication of the extent to which technology has evolved and changed for today's adolescents.

While the literature makes it clear that adolescents today are greatly influenced by the technological world we live in, there are 5 keys characteristics in particular of these adolescents that seem to stand out.

1.1 Identity expressed through technology

For the Net-Geners (or Generation Y as the subset Huntley is examining) their personal technologies are more than just functional tools used to perform particular tasks. Huntley believes that for these adolescents, these devices symbolize and are a reflection of their own personality and individuality. The irony is that this is the same for all adolescents, a case of 'we are all individuals in the same way but different'. They all want to be seen as individuals but they are essentially conformist as they all want their individuality to be expressed in the same way. In the end, they all want to fit in.

Further evidence of the importance of technology in adolescents' identity development is given by Huffaker and Calvert (2005) who examine a specific use of technology, ie how adolescents use weblogs to explore their identity. While their study supports the social interactionist perspective that adolescents can take on different roles and create alternative public selves and perspectives to explore their own identity, particularly given the potential for anonymity in virtual worlds, their data suggested that adolescents tended to create a consistent public face and a cohesive set of representations of who they actually are, or who they perceive themselves to be. In this sense, the Internet has provided a new approach for adolescent identity exploration. By thinking, considering, defining and attempting to articulate their attitudes, thoughts and beliefs, adolescents are undergoing a valuable experience in the process of determining who they really are and what they stand for.

Lenhart and Madden (2007) explain that one of the reasons why social networking sites appeal to teens is that they have the opportunity to present themselves to a group of peers, in a perspective of their choice, then get feedback and preferably affirmation via the built-in tools of the site. This feedback mechanism allows them to test the limits of who they are, who they want to be and how acceptable the image they are presenting is to their peers. In fact a large number of students give a little and often a large amount of false information on their sites, not only to protect themselves from the possibility of predators but also to be playful or silly or simply to explore the boundaries of their identity.

This perspective is reinforced by Bensmiller (2005) in a report commissioned by Yahoo and OMB on global youth, media and technology. Self-expression is found to be vitally important to adolescents. They want their self-created self-brands (the persona or identity they have created to represent themselves, which may or may not be close to their true self) to be seen and heard. It is essential that they can customize and personalize their use of their technologies to reflect the way they want to be perceived. But even though they want to stand out as individuals they ultimately yearn to feel connected to a community.

Although there are many options available to address these needs, the three most significant channels found by this report were music, the Internet and mobile devices. In all of these channels appearance and usage is all customized to the individual and their preferences and allows them to constantly stay connected to their social groups.

1.2 Social networkers and constant communicators

Bensmiller states that a defining characteristic or primary motivation of the way adolescents approach socialization is their desire to be part of a community and the value they place on the relationships in their life. This then is a driving force in their desire to be connected 24-7.

Huntley points out that this is the world's first generation to grow up thinking itself global and benefiting from this outlook. Despite the initial fears that computers and the Internet would turn adolescents into solitary friendless geeks with technology swallowing culture, viewpoints expressed forcibly by Talbot (1995), Huntley explains that adolescents are actually benefiting from the use of the Internet to connect to and build online communities and interact with others. This form of communication has not, as it was feared, replaced face to face experiences but is simply allowing adolescents to communicate more often and

in different ways with their peers. Communication tools are essential for adolescents to maintain friendships and co-exist in social networks and ensure they are not isolated socially. It is the connectedness of technology that appeals to them – they are able to communicate at all times and receive immediate responses. They don't mind structure within this context on condition that their freedom and flexibility are not compromised.

Boyd (2006) explains that it is this structured and organized mechanism of interaction that has led to the huge popularity of social networking sites. The participants want to be public in a way that allows others to view their presence and to allow them to interact directly with those with similar interests.

This is why there is a constant debate as to whether technology use is a distraction from school-work or an effective learning tool. Most Net-geners are social and prolific communicators to the point where parents are greatly concerned by the extent of the communications. Oblinger and Oblinger (2005) found that Net-Geners use technology extensively to socialize and network as well as produce and publish all sorts of content. They enjoy and are stimulated by interaction and particularly real-time interaction.

The Centre for Educational Research and Innovation (2001) examines a number of trends that are contributing to the way in which students are interacting with technology. One of the trends they cite was identified in the Kerrey Report (2000) of pervasive computing and digital convergence. This means that there is a trend towards small multi-purpose devices linked by wireless technologies with a broad spectrum of technologies being merged into interactive devices making communication easier and more seamless. The more portable, the more seamless the tools for communication, the more adolescents will integrate these tools into their daily life.

1.3 Multi-taskers and media-meshers

Bensmiller's report also found that adolescents are under a lot of stress and time pressure to do more things in a day than they actually have time to accomplish. This then is one of the reasons for the high incidences of multi-tasking and media-meshing. Media-meshing refers to the process of shifting between different media in order to supplement or complement information or perspective. Adolescents have little patience to delve to any great depth in a particular media. If they cannot find what they are looking for, they are quick to switch to an alternative media or follow a different lead.

Huntley discusses the consequence of this. The indications are that while adolescents are becoming better at multi-tasking, they are losing the ability to focus on single tasks for extended periods of time.

This is supported by a report by the Kaiser Family Foundation (2005). The report tries to establish just what role media of all types plays in young people's lives, and found that in the US around a quarter of the time adolescents are using one media they are also doing something else media related at the same time. This is particularly prevalent when students are working on homework with students failing to devote the kind of single-minded attention their teachers would like students to give to their homework. They work on homework while watching TV or while using instant messaging with their peers.

One of the key findings of the report was that while the amount of time students have spent using media has remained almost identical to the amount of time spent in the study also conducted by the Kaiser Family Foundation 5 years ago, ie. around 6.5 hours a day, the amount of time spent using more than one media at a time has increased resulting in the amount of actual media being absorbed by students increasing by around 20%. The report found that as new media is introduced adolescents don't give up the old media (for example TV watching has not declined) nor do they increase the hours spent on media (perhaps this is a case of the fact that they can't increase the amount of hours as they are already operating at maximum levels in the time available) so instead they become media multi-taskers (ie they watch TV while also using their laptop).

1.4 Technologically savvy

Another characteristic Huntley discusses is that these adolescents are technologically savvy and this has fundamentally altered the way they view time and space. They expect things to happen quickly in the same way just like the technology operates, and the consequence of this is that they have little patience for delays and at the same time feel there is no point planning too far ahead as everything changes so quickly anyway.

This means that technology for the Net-Geners is not limited to one or two specific applications or devices. Oblinger and Oblinger emphasise that Net Generation teenagers are highly digitally literate and can intuitively and competently use a variety of IT devices. They are eager to explore new technologies and can

transfer skills effectively between various forms of technology. While other generations might find this onslaught of multiple inputs highly distracting, Net-Geners are great multi-taskers, although at times to the detriment of focus and accuracy.

1.5 Prefer to learn through discovery

Part of the reason why these students are so adaptable with new technologies is that as Oblinger and Oblinger point out these students prefer to learn through discovery rather than instruction. They are eager and willing to experiment and much more likely to start pointing and clicking than read a user's manual! This exploratory style helps them to retain information more effectively as they tend to investigate areas and follow directions that are of immediate interest to them.

2. CONCERNS ABOUT ADOLESCENTS, TECHNOLOGY AND LEARNING

Oblinger and Rush (1997) cite a number of common fears about technology apart from the traditional safety and privacy of personal information issues. There have been concerns that technology will dehumanize interaction and lead to a decline in literacy. There are concerns that differing levels of access to technology will cause potential equity gaps in experience and opportunities. And it is not just parents that have had these concerns. Schrum and Berenfeld (1997) point out that schools have often lagged behind society in adopting technological innovations and believe this could be due in a large part to dominant social beliefs about what proper teaching and learning should entail. This belief was reinforced at the 2006 World Computer Congress where it was acknowledged that many teachers are still more comfortable and effective with traditional face-to-face teaching methods without the integration of technology (Chen, Frempong & Cudmore, 2006).

Kvaivak's (2005) paper explores what college students are actually doing with the technology with which they are interacting. Although this study is based on college students, it is still interesting to explore their uses of technology as these students are also part of the Net Generation being examined and have had the same level of exposure to technology as adolescents. Kvaivak found that for these students technology is taken for granted and doing is more important than knowing, with trial and error being the preferred approach to problem solving. The study examined how students use computers and their level of skill and expectations with respect to the integration of computers in the learning process. Contrary to expectations, the results of the study showed that the Net generation only preferred moderate use of technology in the

classroom, although whether this is an indictment on the poor use of technology by instructors rather than a disinclination towards technology on the students' part is unable to be determined. Students' academic paths and disciplines studied were also found to have an effect on attitudes towards computers. It was interesting to note that students cited convenience and time saving as the greatest benefits of using computers as opposed to improved methods of learning.

Kvaivak started with clear expectations of the results this study would yield and ended up with surprising results in a number of areas. The study indicated that students do not necessarily want increased use of technology in the learning process nor should we assume they have the necessary skills to use technology effectively. Kvaivak emphasizes that we cannot become complacent and assume that Net Generation students require less training with technology simply because of their levels of familiarity. The conclusion is that technology is not yet being used optimally as a learning tool and that further developments are needed if a true 'learning revolution' is to occur. Unfortunately Kvaivak does not explain or measure how the technology that students are being asked about is actually used in the classroom. If the instructors are using the tools ineffectively, then it is no wonder the college students stated that they would prefer only moderate use of technology as a teaching aid.

Gardner (2000) builds upon the idea that we are not yet using technology in an optimal way for learning. In the article *Can Technology Exploit Our Many Ways of Knowing* Gardner starts off by explaining his Multiple Intelligences Theory that we learn and can be intelligent in many different ways. This theory forms the framework of his argument. Even if one does not subscribe specifically to his multiple intelligence theory, the basic premise that we learn in different ways and are intelligent in different ways is a sustainable foundation on which to build a perspective. Gardner explains that most formal schooling does not take into account the eight different ways of learning that Gardner proposes and instead focuses solely on developing and testing two forms of human intelligence: logic and language. Gardner suggests that technology could be used to mobilize and develop a greater range of multiple intelligences in students.

Gardner also warns against falling into the trap of using technology for technology's sake. He stresses the importance of not using technology to support the same method of instruction in just a slightly varied format. Instead educators need to first be very clear on their goals and then determine if the technology can be used effectively to meet these goals. This highlights a dangerous assumption alluded to by Kvaivak. There is a belief that because N-Geners use technology incessantly, technology should be used

as much as possible in improving their learning experiences. But although the amount of TV students watch has increased, the call for instruction through TV as a medium has not increased correspondingly.

Gardner proposes two classes of worthy educational goals where the use of technology could be considered. Firstly, the accessibility of information and interaction through technology can help students develop into certain types of adults and develop certain types of skills. This provides support for the idea that while students may not be learning specific curriculum prescribed skills while in a chat room they could be experiencing incidental learning. Secondly, technology can be used to explore the ways of thinking in particular disciplines due to the large volume of information readily available in more interesting and interactive formats – formats that take advantage of the different ways we have of learning and knowing.

While these suggestions support the idea that there is a role for technology in students' learning processes, Gardner does not address the issues of effective implementation for such a strategy. Again, we return to one of the central conflicts when the issue of adolescents and technology is raised: how to strike an effective balance between learning mediated by technology and technology that is proving a distraction from learning.

On a more practical note, a big issue concerning integrating technology usage outside of the classroom environment is that the Internet and other technologies can be very addictive to some adolescents, even leading to the identification of the existence of an Internet Addiction Disorder (IAD) by Ferris (2004). Butterfield (2005) points out that if a student spends 30-40 hours a week on the Internet on top of their school time all aspects of their life - school, friends and family, will suffer. Students may then need professional support to bring back balance between the virtual and real worlds that they inhabit.

Cranmer (2006) examined young people's use of the Internet for homework in the UK. She found that young people have embraced the Internet for homework, extensively using it and viewing it as a helpful tool to find and retrieve information. However, her study showed that it seemed as though the majority of young people actually made quite limited use of the Internet. Cranmer explains that the main use of the Internet by children and young people was simply to locate information using similar methodologies as they would for more traditional research options (with of course the same associated issues of copying and plagiarism, although prevalence was greater in online research due to ease of copying and pasting). Although young people sometimes used revision sites to prepare for exams, they seldom used email to seek advice or took advantage of other possibilities on the Internet to help them with their learning. Her

conclusion is that in some ways the Internet has simply become a new reference tool for students, or alternatively for parents if they felt their own subject knowledge was inadequate to help their students. Parents were clearly concerned that with the ease of searching and copying information the learning taking place was not as deep as with traditional approaches and that students often completed their work on a more superficial level when using the Internet as their source of information.

A contrasting and different viewpoint comes from Watson (2006) who obviously would view these concerns as unfounded. Watson points out that as Jonassen (2000) previously indicated, a shift in perspective has occurred, students are now learning *with* the software instead of *from* the software. Watson takes this idea further and states that therefore we can begin to categorise technology use by the nature of the learning that they are enabling. For example, many software applications can now engage learners in critical thinking, creating categories of use such as semantic organizers or dynamic modelling tools as opposed to the lower order tasks students may have previously utilized technology for.

This idea is expanded upon in Warlick's (2006) hypothetical discussion of how the latest social networking and other web-based tools used by adolescents could be harnessed to transform the learning experience in the school environment.

3. POTENTIAL ADVANTAGES OF USING TECHNOLOGY FOR LEARNING

As we move away from the concerns towards potential advantages of technology use Oblinger and Rush explain that access to technology can actually enhance learning in a number of ways. Use of technology has been found to have positive effects on students' attitude to learning as has the ability to self-pace and have some measure of control over their learning. Introduction of technology can assist in making learning more learner-centered (ie. the learner decides what is needed and when) and actually increase interaction between students as well as the retention of information. It is important to note that the validity of the conclusions Oblinger and Rush have reached must depend greatly on context and the effectiveness of implementation. However, the potential power of technology to aid in motivating students to learn must be taken into consideration when looking at the possible advantages of using technology for learning.

Rose and Meyer (2002) point out that one of the great powers of digital media is the flexibility and versatility of these forms of interaction– learner styles can be catered to through providing a variety of different options capitalizing on the strengths of different students. The same material can be presented to

students in a number of different formats even allowing students the option to choose the style that best suits their needs at that time. Another strength is that digital media are transformable and can be stored and presented in a variety of media. A huge advantage, given the speed at which information changes, is that digital media can be easily updated and expanded upon, allowing instructors to react in a timely way to students' needs. It can also be easily networked and accessed and allow interaction between participants. It is this diversified palette that helps improve communications with and between adolescents.

The role of the social networking site Myspace in the school environment is explored by Harris (2006). He raises a valid point that it is unreasonable to think that these sites will go away, and instead of simply banning these sites proposes that schools need to take steps to involve themselves in this area instead and use students' interests in them to promote learning. He suggests, for example, that schools could use Myspace as a springboard to discuss relevant issues such as copyright infringement and dialogue on what is appropriate text and imagery for public and private display. The idea is that educators need to take technologies that interest and engage adolescents and integrate these into learning activities in the school environment.

Futurelab examines the advantages of the current social software that allows users to communicate, collaborate and publish in a number of ways, in a variety of media. This software helps learners act together to build knowledge bases that fit their specific needs. The use of social software in education is still in its infancy but has the potential to allow educators to deliver communication between groups, enable communication between many people, provide gathering and sharing of resources as well as collecting and indexing of information. Most importantly it can provide new tools for knowledge aggregation and creation of new knowledge, delivering this knowledge to many platforms in a way that is appropriate to the creator, recipient and the context in which it is being applied.

One of the cogent arguments for the power of technology is discussed by Breck (2002). Since 1996 Breck has been actively engaged in digitizing academic knowledge for students through the interface of the Internet. Breck suggests that the increasing use of technology means that more people are getting access to learn about more things and that technology is simply the vehicle for this transmission, not the passenger. Breck believes that the questions asked about technology are misguided. Instead of asking if all students can learn through the medium of technology we should be asking how can we direct students into productive activities on the Internet.

4. DISCUSSION

Breck outlines an interesting perspective with respect to technology use. Perhaps the reason why we have difficulty in understanding and exploiting technology outside of the classroom is that up to this point we have let students determine the direction and use of technologies in this environment. It is the digital generation who has grown up with technology and is confident and capable in its use. But they do not necessarily have the maturity, life experience or understanding of teaching and learning to make informed decisions about how the technology could best be used and integrated. Unfortunately those with this understanding about learning experiences often lack the knowledge and in-depth understanding of the technologies.

Prensky (2005) proposes an effective approach for teachers who are part of the digital immigration generation. Teachers need to encourage decision making among students, involve students in designing instruction, and get input from students about how they would integrate the knowledge that their students acquire outside class in their digital lives.

Prensky also makes what many would consider a bold statement. He states we need to accept that common sense tells us that we will never have enough effective teachers to engage these students in the traditional teaching methods and therefore we must engage the students in the 21st century way: through technology and through the attitude of ‘gameplay’. By making decisions with them, not for them. By providing students with desirable goals, interesting choices, immediate and useful feedback, and opportunities to move ‘up a level’, just like in the game-playing world inhabited by so many adolescents.

Perhaps with the next generation many of the existing issues or concerns around technology will disappear as the Net-geners will be able to help their students integrate technology in successful learning strategies. As they will be approaching technology from a shared perspective and a life-long experience that contributes to a deep and fundamental understanding that is simply not possible for many of the teachers and parents of the current generation, they will bring a fuller understanding of the tools and the way they can best be implemented.

It seems that students spend a large amount of time simply using and experiencing technology in an instinctive manner without spending time reflecting on the advantages or disadvantages of what they are doing with the technology, or the amount of time they are spending on these activities or whether they are

using the technology in a way that aids in their learning. This is only to be expected with adolescents so the importance of parents and teachers in helping students with this meta-cognitive process in evaluating their technology use is paramount. It can also be difficult for students to distinguish between formal and informal learning with technology.

Green and Hannon (2007) point out some important changes that are needed in schools. Schools need to find ways to recognize and value the learning that goes on outside the classroom and support this learning by finding a space to reflect on it, galvanize it and develop it so that students can recognise and transfer the skills they are using in situations outside the classroom into new environments and different types of learning experiences.

Therefore an examination of how students currently use technology for learning outside of the classroom environment, and an exploration as to how students can tap into the various forms of technology they use for personal uses and find ways to use these to further their academic studies, would be a worthwhile area of research.

What promoted this thought was a recent experience I had with a Year 10 student. She was explaining how she was studying for her exams. Using a web cam she had created a series of questions and answers where she would play back the file of herself asking the questions which she then answered and then checked her answer with the next click of the mouse. Realistically this is no different from the traditional use of flashcards or writing out a series of questions on a piece of paper. But because she was using the personal technologies that she enjoys in her private life and associates with ‘fun’ she stated that she was motivated to study in a way that traditional pen and paper activities simply could not inspire.

It is certainly worth exploring whether integration of technologies can improve and deepen learning experiences, and by providing students, parents and teachers with ideas on uses of technology outside of the classroom environment we may be able to inspire students to study and learn in a more effective way.

Therefore, it seems the question I am really interested in is ‘how do students use technology to expand their learning and academic experiences outside of the classroom environment when preparing for examinations, and how else could their personal technologies be integrated into these experiences, and what are the positive benefits from this immersion?’

References:

Bensmiller, K. (2005). *Truly, madly, deeply engaged - global youth, media and technology.* Report commissioned by Yahoo! & OMD. Retrieved 4th May 2007 at http://www.iabaustralia.com.au/Truly_Madly_Final_booklet.pdf

Boyd, D. (2006). *Friends, Friendsters, and MySpace Top 8: Writing Community Into Being on Social Network Sites.* First Monday. 11(12). Retrieved 16th May 2007 at: http://www.firstmonday.org/issues/issue11_12/boyd/index.html

Breck, J. (2002). *How We Will Learn in the 21st Century.* The Scarecrow Press, Inc, London.

Butterfield, L. (2005). *Cybersafety: An Intrinsic Part of the Online Experience.* In K.W.Lai (Ed.), *e-Learning Communities: Teaching and Learning with the Web.* Dunedin: Otago University Press.

Centre for Educational Research and Innovation (2001). *E-Learning: The Partnership Challenge*. OECD, France.

Chen, S., Frempong, G. & Cudmore, W. (2006). *Gesture Friendly Interfaces for Classroom Teaching with Thinking Tools*. In IFIP 19th World Computer Congress, TC-3, Education, August 21-24, 2006, Santiago, Chile edited by Kumar, D. & Turner, J. (eds). Springer, New York.

Cranmer, S. (2006) *Children and Young People's Uses of the Internet for Homework*. Learning, Media and Technology Journal. 31(3), 301-315. Retrieved 6th May 2007 at: http://www.informaworld.com.ezproxy.lib.uts.edu.au/smpp/content~content=a755226800

Ferris, J. (2004). *Internet Addiction Disorder: Causes, symptoms and consequences*. Retrieved 16th May 2007 at: www.chem.vt.edu/chem-dept/dessy/honors/papers/ferris.html

Futurelab (2006). Social software and learning. Retrieved 4th May at: http://www.futurelab.org.uk/download/pdfs/research/opening_education/Social_Software_report.pdf

Gardner, H. (2000). *Can Technology Exploit Our Many Ways of Knowing?* Cambridge MA: The Harvard Education Letter.

Green, C. & Hannon, C. (2007). *Their Space: education for a digital generation*. Retrieved 4th May at DEMOS http://www.demos.co.uk/publications/theirspace

Harris, C. (2006). MySpace *Can Be Our Space: Let's turn the infamous networking site into a teachable moment.* School Library Journal, 5/1/2006. Retrieved 16th May at: http://www.schoollibraryjournal.com/article/CA6330760.html

Huffaker, D. A., and Calvert, S. L. (2005). Gender, identity, and language use in teenage blogs. *Journal of Computer-Mediated Communication, 10*(2), article 1. Retrieved 17th May at: http://jcmc.indiana.edu/vol10/issue2/huffaker.html

Huntley, R. (2006). *The world according to Y: inside the new adult generation.* Allen & Unwin, Crows Nest.

Jonassen, D. H. (2000). *Computers as mindtools for schools: Engaging critical thinking*. Prentice Hall, Ohio.

Kaiser Family Foundation (2005). *Generation M: Media in the Lives of 8-18 Year-olds.* Retrieved 6th May at: http://www.kff.org/entmedia/entmedia030905pkg.cfm

Kvaivik, R. (2005). *Convenience, Communications and Control: How Students Use Technology.* EDUCAUSE Center for Applied Research and University of Minnesota, Twin Cities.

Lenhart, A. & Madden, M. (2007). Teens, Privacy and online social networks. *How teens manage their online identities and personal informatin in the age of MySpace*. PEW/Internet & Amreican Life Project. Retrieved 18th May 2007 at: http://www.pewinternet.org/pdfs/PIP_Teens_Privacy_SNS_Report_Final.pdf

Oblinger, D. & Oblinger, J. (eds) (2005). *Educating the net generation* [electronic resource]. Boulder. Retrieved at: http://www.educause.edu/ir/library/pdf/pub7101.pdf

Oblinger, D. & Rush, S. (eds) (1997). T*he Learning Revolution*. Anker Publishing Company, Inc, USA.

Prensky, M. (2004). *The emerging online life of the digital native: What they do differently because of technology and how they do it.* Retrieved 7th May 2007 at: http://www.marcprensky.com/writing/Prensky-The_Emerging_Online_Life_of_the_Digital_Native-03.pdf

Prensky, M. (2005). *Listen to the natives.* Educational Leadership Journal, 63(4), 8-13. Retrieved 7th May 2007 at: http://www.ascd.org/cms/objectlib/ascdframeset/index.cfm?publication=http://www.ascd.org/authors/ed_lead/el200512_prensky.html

Rose, D. & Meyer, H. (2002). *Teaching Every Student in the Digital Age*. ASCD, USA.

Schrum, L. & Berenfeld, B. (1997). *Teaching and Learning in the Information Age*. Allyn & Bacon, USA.

Talbot, S. (1995). *The Future Does Not Compute: Transcending the Machines in Our Midst.* O'Reilly & Associates, Inc, USA.

Tapscott, D. (1998). *Growing Up Digital: The Rise of the Net Generation,* N-Gen Learning. McGraw-Hill, New York.

Warlick, D. (2006). *A Day in the Life of Web 2.0 -- The latest powerful online tools can be harnessed to transform and expand the learning experience.* Technology & Learning Journal, 27(3), p20. Retrieved 7th May 2007 at: http://proquest.umi.com.ezproxy.lib.uts.edu.au/pqdlink?index=1&did=1154943411&SrchMode=3&sid=1&Fmt=3&VInst=PROD&VType=PQD&RQT=309&VName=PQD&TS=1180935327&clientId=20928&aid=1#fulltext

Watson, D. (2006). *Understanding the relationship between ICT and education means exploring innovation and change.* Education and Information Technologies Journal, 11(3-4), 199-216. Retrieved 6th May 2007 at http://www.springerlink.com.ezproxy.lib.uts.edu.au/content/e354t511281tt523/fulltext.pdf