e-Constructing theological education for ministry in a www world

Stephen Haar
Australian Lutheran College
Inaugural Lecture 2008

While serving as parish pastor in Queensland and then in South Australia, Stephen gained his doctorate through the Department of Studies in Religion at the University of Queensland. His thesis topic was **Simon Magus: first Gnostic?** Midway through last year Stephen commenced as lecturer in New Testament studies at Australian Lutheran College. He took on the additional role of Academic Dean this year. The paper that follows is an edited version of the inaugural lecture he presented at the commencement of the 2008 academic year at Australian Lutheran College. The conversational tone of the original address has been retained.

Introduction

There have been many notable events and inventions in the record of human history that people claim have changed the world, but the democratisation of Internet technology— through the invention of the World Wide Web by British technician Tim Berners-Lee in 1989— is a prime example of what scientists involved in future studies refer to as a 'singularity'. The term 'singularity' refers to an 'event horizon' in human technological development when the pace of change is so rapid, and its impact so deep, that human life is irreversibly transformed.

On October 13, 1994, Netscape made available, as a free download from its company Web site, a prototype version of its internet browser. The world changed on that day without most of the world realising it. Thousands of people took advantage of Netscape's offer and began to experience the World Wide Web. Now, a little more than a decade later, 'the internet has reached into—and in some cases, reshaped—just about every important realm of modern life. It has changed the way we inform ourselves, amuse ourselves, care for ourselves, educate ourselves, work, shop, bank, pray, and stay in touch'.²

In recorded history, no technology has grown faster than the World Wide Web.³ It took 40 years for radio to reach 50 million domestic users; it took 14 years for television to achieve a similar audience; and the internet, just 4 years (Sweet 1999: 32). Prior to 2000, the digital revolution largely involved using computers to do what humans have always done, but since the turn of the millennium people have begun 'using computers to do what humans have never done before' (Sweet 1999: 78). The speed of life in the digital age is leaving skid marks. Change itself is being changed (Stearns: 152); no longer incremental, change is now exponential. Intel Corporation boasts that it is doubling the computing power of the world every year (Miller: 140). In his 2005 published book, *The singularity is near*, inventor and futurist Ray Kurzweil

Numerous listings are available online. For example: http://timesofindia.indiatimes.com/articleshow/msid-2550954,prtpage-1.cms (retrieved 3 February 2008).

Pew Internet and American Life Project, 'Internet: The mainstreaming of online Life', Trends 2005: a look at changes in American life, 57–69, http://www.pewinternet.org/pdfs/Internet_Status_2005.pdf

In 1969 only 4 primitive sites existed in the entire world. In 1990 there were 330,000. By 1997 there were 15,000,000. In January 2008 there were more than 155,500,000 websites. See, for example, http://news.netcraft.com/archives/2008/01/28/january 2008 web server survey.html (retrieved 3 February 2008); also, http://www.zakon.org/robert/internet/timeline/ (retrieved 3 February 2008).

writes about a future period of exponential change when human DNA meets the computer chip, and the digital age transforms into the bionomic age (Robinson: 15–17). While some may choose to weigh such vision with caution, or dismiss it as Hollywood science fiction, it is science fact that more has changed in the past 40 years of western culture than in the past 400 years put together. From heart pacemakers and myoelectric prosthetics to robotic surgical procedures and breast implants, the formerly unthinkable has now become commonplace.

So, what does this Internet-generated, technology-fuelled tidal wave of change mean for the Lutheran Church of Australia (LCA)? What does it mean for church worker training? Are we ready to engage with tomorrow? Do we boldly stand, eyes wideopen, with our faces or our backs turned towards the future?

This opening lecture for the 2008 academic year is presented as part of a wider, ongoing conversation in the LCA about church worker training and ministry. In delivering this lecture let me admit from the start, I do so not as a futurist, cultural historian, sociologist, or specialist in the theory and methods of education, but as a pastor and teacher of the church who understands the districts and congregations of the LCA, and Australian Lutheran College (ALC), to be partners in mission—and believes the one cannot be healthy without the other.

In this lecture I want to raise awareness of the need to review and reform our current model of theological education so that pastors and other church workers are adequately prepared in their calling to *equip the saints for the work of ministry* in a digital world, and its fast approaching successor: the bionomic age. What I offer is not a roadmap and much less a manifesto; but I will present some passionately held convictions and concerns, partnered by some questions and suggestions about the use of new technologies in theological education.

The need for e-Construction

First, I begin by introducing the relevance and fundamental importance of my topic: 'e-Constructing theological education for ministry in a www world'. As already highlighted by way of introduction, change in our digital age is an even greater story than that of the Industrial and Technological revolutions combined. This experience of escalating cultural change, combined with a technology-generated paradigm shift in education, presents compelling reasons to review and reform learning and teaching at ALC.

Not since the invention of the printing press provided open access to knowledge in printed form have educators experienced such a transformative impact from technology. Teachers from primary to higher education sectors are being faced with new choices about their pedagogies. Will they incorporate digital technology into their classroom practice, or, instead, expect students to make use of new technologies in their work outside of class? Which tools are best suited to the individual's teaching style and their particular field of study? How does one incorporate those tools to improve teaching and learning?

What about theological education? Are teachers at ALC somehow an exception to the trend? What do the digital age and the attendant paradigm shift in education

See Star Trek: First Contact, 1999. Paramount Pictures, Hollywood, California. View the cyborg Captain Luc Picard on YouTube. http://www.youtube.com/ [retrieved 3 February 2008].

In 1994, a report appeared in the *Wall Street Journal* (1 February 1994) about research being conducted by biophysicists at the Naval Research Laboratory in Washington, in collaboration with scientists at the University of California, creating electronic microchips that use living brain cells.

mean for those of us who are in the business of preparing people for ministry in the congregations and schools of the church? Are today's students at ALC the people our courses were designed to teach? Are people in our 21st century culture the people our vocational formation was designed to reach?

I am certain that future students choosing to study through ALC will increasingly be children of the digital world. If ALC teachers are to converse with them and upon graduation students are to converse with people in the church and world they leave to serve, their teachers need to become fluent in the *lingua franca* of the digital age. Key words in this language are 'relationships' and 'connectivity' since digital culture, first and foremost, is not about technology *per se*, but about embracing new experiences of communication and community.

The Web is transforming into a global virtual-world where people enter to explore, experience and engage. People are developing rich, varied and complex relationships online, and, while not rejecting traditional relationships, people often discover it is possible to have more in common with someone living halfway around the world than with the person next door. Some of the most popular meeting places in cyberspace are competitive gaming sites, interactive social software like *Facebook* and *MySpace*, and virtual reality sites like *Second Life*. 'Second Life' is a simulation game where players can create a virtual version of themselves—an avatar—and interact with other people in 3D worlds. According to its website, *Second Life* has a population of more than eight million residents and millions of dollars change hands there every month. ⁶

On July 27, 2007, *La Civilta Cattolica*, a Rome-based Jesuit paper, urged members of the Catholic Church not to be scared of entering the virtual world; it may be fertile ground for making new converts. While the virtual world might be a refuge for some people seeking to flee the real one, the paper reported, it is also full of people seeking something more from life, including, possibly, spiritual enlightenment.

For the LCA to ignore the ways in which communication and learning have changed, and the potential of technology to connect people and support learning, would be to fail in our task of adequately preparing people for mission and ministry. In truth, theological education at ALC is being presented with Hobson's choice in digital guise: only one option is offered, and we may refuse to take that option, but we dare not refuse if we hope to remain relevant to our mission focus and purpose.

Yet, worldwide, theological educators have been among the slowest to adopt new instructional technologies and new forms of communication. This tardiness is not simply due to the challenges of learning how to use digital technology and equipment. Rather, some teachers have deep concerns about the theological appropriateness and pedagogical effectiveness of technology. These concerns reflect deeper convictions about the nature of theology, the embodied character of learning, and the standards of intellectual, pastoral, and spiritual development expected of those preparing for ministry in the church.

Second Life is a 3-D virtual world entirely created by its 'residents'. Since opening to the public in 2003, it has grown explosively and today is inhabited by millions of 'residents' from around the globe. The marketplace economy of Second Life currently supports millions of US dollars in monthly transactions. This commerce is handled with the in-world unit-of-trade, the Linden dollar, which can be converted to US dollars through online Linden Dollar exchanges. http://secondlife.com/

Robin Pomeroy, 2007. 'Jesuits say take word of God to Second Life', http://www.reuters.com/ [retrieved 03/02/08]

The basic model of learning in Christian tradition is that of a highly personal and immediate relationship between master and pupil. Jesus called disciples who followed him. Countless generations of Christians have organised themselves around this example. Undoubtedly for many teachers and students real learning takes place when students have the opportunity to be mentored under a respected and celebrated teacher. However, on the one hand, the durability of this mentor-student model exists in tension with models of adult pedagogy that stress learning as a self-directed, cooperative venture; and, on the other hand, it exists in tension with equally ancient collaborative and transformative models for the study of theology; a 'learning society' within the life of the church: in the practice of liturgy, devotion, catechesis, and witness.

I suggest the time has long come for a thorough review of program content and pedagogy at ALC; a situational analysis with a view to *e-constructing* the college curriculum. A situational analysis examines the context in which the curriculum is to operate, and it continues through the process of development and implementation. It takes into consideration both external and internal factors; clarification and statement of educational objectives and outcomes; issues of content and teaching method; modes of delivery. My hope for such a review is the implementation of a 'bricks and clicks' approach to church worker training; combining the best of classroom teaching with the resources of creativity and connectivity that digital technologies now make available (see Weigel, 2002).

At present, our college, like other providers of higher education in Australia, faces a triple challenge to its immediate future: outcomes, accessibility, and costs. It is proving increasingly difficult to offer courses of study that attract, retain, and equip students at a price they can afford. Yet, I find it difficult to imagine how ALC will be able to meet the future needs and goals of church worker training—to prepare men and women for service and leadership in a www world—without greater investment in appropriate digital technology. This makes the task of curriculum review even more urgent, since without first asking hard questions about our educational goals any investment in new technologies will simply launch an unguided missile of disappointment, of wasted money and missed opportunities.

Changing learning and teaching

Among all the factors, external and internal, students are the first consideration in *e-constructing* theological education for a www world. What do today's students look like? What are their needs? Abilities? Key personal characteristics? What are some of the implications for 21st century theological educators?

In his 2001 article, *Digital natives, digital immigrants*, Marc Prensky provocatively stated: 'Today's students are no longer the people our educational system was designed to teach'. Students from pre-school to university have spent their entire life surrounded by a digital environment. The level of their immersion and interaction with technology has been so complete that students now think and process information differently from their predecessors. ¹⁰

A challenging 'vision' of students today is presented in a video-clip produced by Michael Wesch and the Spring 2007 students of *Introduction to Cultural Anthropology*, Kansas State University. http://www.glumbert.com/media/visionstudents [retrieved 3 February 2008]

Marc Prensky, 2001, 'Digital natives, digital immigrants', On the Horizon 9/5 (October) 1–6. http://www.marcprensky.com/writing/

The cerebral circuitry of digital natives has changed. A new 'sensorium' and circuitry of consciousness has been created by an electronic culture (compare Ong 1967: 87–92). The research of Frederic Vester on cybernetic thinking—postmodern curvilinear thought—details a thought process radically different to Aristotelian logic; reasoning that takes place through a series

I am not a *digital native*. Instead, I am what cultural historians now label a *digital immigrant*. That means, I can remember living in a world before computers, videogames, DVDs, i-Pods, email, the Internet, instant messaging, webcams, mobile phones, and all the other toys and tools of the digital age. Even though I have been an enthusiastic and early adaptor of new technologies, I am not a native in the digital world. Clearly, like the persistent New Zealand accent that some people claim they can still hear when I speak, you can hear my digital immigrant accent if you listen and observe closely. Tell-tale signs are my preference to print out large documents to edit by hand rather than editing on-screen; in suggesting to my daughter that she cannot expect to learn anything while watching TV, or listening to music on her i-Pod, or instant messaging her friends—all at the same time. I even admit to having rung a friend once to ask if he had received my email.

Personal insights like this may raise a smile, but in truth they are no laughing matter. One of the greatest challenges facing the entire education sector of the digital world is that *digital immigrant* teachers are struggling to teach a generation who have been socialised differently and speak a new language (Prensky 2001: 2).

So what should happen? Should *digital natives* change, and adopt old ways of thinking and learning? Or, should *digital immigrants* learn the new? Marc Prensky (3) concludes: '...if *digital immigrant* educators really want to reach *digital natives*—that is, **all** their students—they will have to change'. Any teacher who isn't actively trying to understand the nature of the prevailing culture is already time expired. Similarly, any teacher who doesn't know how to surf the Web, who has never visited a blog site, or listened to a podcast, or watched a vodcast, who has never visited Wikipedia, or who has never used a social networking tool, is on the verge of obsolescence. It's a huge task for *digital immigrants* to keep up, but it is not impossible. It means unlearning and relearning some things, it requires intentioned practice, and most of all the humility to engage in reverse mentoring with those young enough to grasp intuitively the dynamics and potential of emerging technology.

Now, in case I have unintentionally created the wrong impression—in speaking about the need to embrace new technologies that enhance learning and teaching—let me assure you that ALC has already discovered computer technology. ¹¹ However, that being said, adding technology to an educational paradigm that has largely focused on passive learning through the transfer of information has had the consequence of highlighting the inadequacies of using the transfer method in the first place. The response of students makes it clear that flashy technology used in the service of the old 'banking' model of education—transferring stuff from textbooks into students' heads—makes little sense to them. In fact, this is not what they look for in education at all.

The role of future teachers is being morphed into that of a guide and teacher-learner rather than as an expert or the fount of all knowledge. In a world of exponentially expanding data and connections, teachers need to remember that what they have to offer is more than data and frameworks for linking and interpreting data: they can bring themselves, their experience and vulnerability to the classroom; they can invite

of links and a multitude of connections. See Hans Graf, http://www.sgzz.ch/?Systems_Thinking_Practice [retrieved 3 February 2008]

Teachers make use of personal computers in their offices, at home, and in the classroom. Students bring their laptops into class, make use of wireless internet access, prepare and submit assignments electronically, make daily use of email, and, in some units, they are required to contribute to blogs, pbwikis, and nings. It is no longer rare to see teachers use presentation software like PowerPoint and the interactive SMARTboard—at least in some classes.

collaboration and be willing to admit their limitations. Education involves more than the cognitive domain; it is also affective, involving the shaping of values, attitudes, and emotions. Theological educators, most of all, should be aware that knowledge without passion, or love, according to the apostle Paul, is nothing. Possessing humility with regard to the task and the truth is not only a credible expression of human finitude in the face of increased complexity, but it is also a healthy recognition of the Christian body and our need for each other—it is theological education wholistically integrated with the lived experience of Christian community.

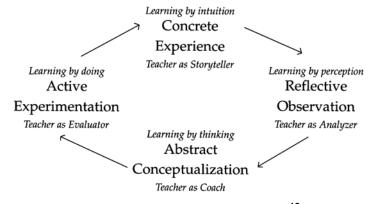
Enhancing learning environments

In turning to consider how new technologies offer opportunities to enhance learning in the classroom, it needs to be said that while technology is a valuable tool in teaching it is not the tool. Technology is not a substitute for established teaching methods. In fact, for some teaching and learning activities digital technology would provide little improvement and may actually hinder a student's learning process. However, the choice to introduce technology into the learning environment does facilitate multi-intelligent learning and ways to transcend boundaries inherent to traditional teaching methods and modes of delivery.

Multiple pathways to teaching and learning

It is commonplace these days to say that 'everybody learns differently'. In one sense this is completely true—we all come to whatever is to be learned with different experiences, all of which affect our learning; including prior knowledge and general intelligence. Howard Gardner developed the theory of 'multiple intelligences' to describe the different ways children gain and develop basic cognitive skills. However, more applicable for teachers in higher education is the learning model developed by David Kolb. This model comprises four elements that form a spiral of learning. Individuals can begin with any one of the four elements, but typically they begin with a concrete experience.

Usually, traditional lecture-orientated classes do not have a concrete experiential aspect to them; rather, they provide what Kolb would describe as the 'abstract conceptualising' learning experience. However, when a teacher decides to bring digital technology into the class, students receive an enhanced learning experience. Computers can serve as storyteller, analyst, coach and evaluator, engaging every student on the level of their preferred learning style.



Source: Cormode 1999:108¹²

¹² Scott Cormode, 1999. 'Using computers in theological education: rules of thumb', *Theological Education* 36/1, 101–115.

Greater connectivity

Digital technology now makes it possible for every classroom to be local and global. Learning that is distributed over the internet allows access to classes and coursework in both synchronous and asynchronous modes: at any time, from any place, and at every pace. Distributed delivery transcends the barriers of time and geography. Think about ALC classes based in Adelaide being in real-time conversation with other students nationally and internationally, enjoying not only theological dialogue, but intercultural and perhaps even interreligious exchange.

Digital technology also allows virtual-field trips, access to rich primary sources in literature, art, culture, and every imaginable field of human research; including the possibility of initiating conversations with local and international experts.

Enhanced interconnectivity

Computer technology provides ever-expanding opportunities to bring learners and teachers together—email, mobile phones, chatrooms, blogs, wikis and nings. Each of these allows students to connect with one another, their teachers, and coursework, outside the normal context and confines of the classroom. Frequent teacher-student contact in and out of class is an important factor in student motivation and involvement. The concern of teachers helps students to get through tough times and to keep on working. Students who know their teachers well experience enhanced intellectual commitment and receive encouragement to think about their own values and plans.

One of the challenges that face teachers in supporting learning is to know their students well enough to see their minds in action. As the video 'A Private Universe' documents, unless teachers engage students at this individual level where meaning is constructed and lead them beyond their constructions to new understandings, then students can conclude their studies and graduate with the same misconceptions with which they began (Hess: 85).

Learning is not a spectator sport. Students do not learn much just sitting in classes and listening to teachers, memorising and spitting out answers in a trivial pursuit approach to education. Digital technologies make it possible for teachers to create learning spaces in which all students are required to talk about their learning, write reflectively about it, relate it to past experiences, and identify new understandings. This gives teachers insight to their minds at work. While small discussion groups are a time-honoured learning activity, new digital technologies make the process easier and more beneficial for student and teacher alike. Students often find online discussion a safe environment without the same pressure to perform that exists in real-time discussion. At the same time, hosting asynchronous online discussions allows teachers to listen in on every conversation in all groups. ¹⁴

The possibilities of interconnectivity are perhaps only limited by our creativity. There is much we can learn from the practice of others in church worker education; for example, in their efforts to create and maintain social presence online, as well as

Harvard-Smithsonian Centre for Astrophysics, 1987. *A private universe*, http://www.learner.org/resources (retrieved 3 February 2008). This video brings into sharp focus the dilemma facing all educators: Why don't even the brightest students truly grasp basic concepts?

Richard W Nysse, 2004. 'Online education: An asset in a period of educational change,' in *Practical wisdom: on theological teaching and learning,* ed, Malcolm L Warford, Peter Lang, New York, 197–214. As Nysse (205) points out, '...a threaded discussion allows time for everyone to contribute; everyone can "hear" by reading what everyone else has stated. There is no speaking over each other, and nothing is lost if there is a lapse in attention. If small groups are formed, the teacher can "hear" the contribution of every student'.

providing effective vocational formation for those living in a virtual culture.¹⁵ This is different from the preferred face-to-face model currently practiced by ALC, but different doesn't have to mean defective—or wrong.

Integrated learning

During the course of study it is rare to find biblical studies classes interacting with those studying historical and confessional theology, or preaching, or education, or missiology. Again, it would be rare for those studying systematics and ethics to interact with pastoral care and administration classes. This fragmentation of the program is further complicated by the maintenance of discrete schools of theology, and the barriers that imposes on student interaction and theological formation. Computer technology offers an opportunity to integrate learning in ways that will enhance the ability of students to be reflective and insightful theologians when they graduate.

Church-wide links

Finally, digital technology offers new connections between ALC and the congregations of the church. The college Website presents opportunities for the hosting of resources to benefit students before and after they graduate, as well as other interested persons in the LCA and beyond. To develop the college Website in such a way would not only support life-long learning and the mission of the church, it would also give credible witness to ALC being a connected, supportive, servant-learning community.

Conclusion

I began by highlighting how internet and digital technology has generated a tsunamilike wave of change in our world. So rapid and deep has been its impact that human life has been irreversibly transformed. As we contemplate the uncertainty of this change to the global landscape, and our response in preparing church workers for ministry in such a www world, I want us also to reflect on a word of certainty. This word of certainty is about another singularity whose transforming wave of impact remains un-crested: the resurrection of our Lord, Jesus Christ. The resurrection of our Lord Jesus from the dead overcomes all forms of death, change, and decay, and brings the 'peace that passes all understanding' [Phil 4:7].

In this 40th anniversary year of providing theological education for church workers in the LCA, we can draw courage and hope for the strange and uncertain journey ahead from the words of St John's gospel: 'From that time many of his disciples went back, and walked no more with him. Then Jesus said to the twelve, Will you also go away? Then Simon Peter answered him, Lord, to whom shall we go? You have the words of eternal life. And we believe and are sure that you are the Christ, the Son of the living God' [Jn 6:66–69].

This was the text chosen by Dr Siegfried Hebart to address the first student body of the newly opened Luther Seminary, at the beginning of the academic year, on 4 March 1968. In closing I include a paraphrase of his reported words as a witness from the past that inspires hope for the future.

See Steven R Aragon, 2003. 'Creating social presence in online environments', in Facilitating learning in online environments, Jossey-Bass, San Francisco, 57–68; Charles R Foster, Lawrence A Goleman, and Barbara Wang Tolentino, 2006. 'Pedagogies of formation', in Educating clergy: teaching practices and the pastoral imagination, Jossey-Bass, San Francisco, 100–126; Mary Hinkle-Shore, 2007. 'Establishing social presence in online courses: why and how', Theological Education 42.2, 91–100.

Peter speaks for the disciples and he speaks for us, when he says: 'Lord, to whom shall we go?' The Christian church is based on the confession made by the first disciples and on the faithfulness with which they clung to that confession. This faith and hope was no sudden thing but was born out of an enduring relationship with Jesus. In the same way, their confession, their story, their true conviction with a sense of direction—that means so much for Church and College—will only become ours as we exercise faith in fellowship with Christ, in a life of prayer and meditation.

Our confession of Jesus grows as the fruit and blessing of our struggle, our defeat, and of his gift of victory. In confessing Jesus we get to know him as the Holy One who confronts us with all our sin and guilt. All our insight, theories, and tidy plans prove insufficient to secure the future. So we throw ourselves on his mercy and on his words of eternal life, those creative and transforming words spoken from the cross and grave.

To whom will we go ... on the uncertain journey that lies ahead? To whom shall we go with our longing for God and life? To whom shall we go with the doubts, guilt, and fear that condemn us? There is only one who gives courage and comfort: Jesus, the Son of the living God. He has the words of eternal life (Hebart: 4).

References

- Aragon, Steven R, ed, 2003. 'Creating social presence in online environments', in *New directions for adult and continuing education: facilitating learning in online environments*, Jossey-Bass, San Francisco, 57–68.
- Cormode, Scott, 1999. 'Using computers in theological education: rules of thumb', *Theological Education* 36/1, 101–115.
- Foster, Charles R, Lisa Dahill, Larry Golemon, Barbara W Tolentino, and Lee S Shulman, 2006. 'Pedagogies of formation', in *Educating clergy: teaching practices and the pastoral imagination,* C R Foster et al, ed, Jossey-Bass, San Francisco, 100–126;
- Graf, Hans Georg, 2007. 'Cybernetics', *Welcome to the future*, http://www.sgzz.ch/?Systems_Thinking_Practice (retrieved 3 February 2008).
- Harvard-Smithsonian Centre for Astrophysics, 1987. *A private universe*, http://www.learner.org/ (retrieved 3 February 2008).
- Hebart, Siegried, 1968. 'Comment', Tangara 1, 4.
- Hess, Mary E, 2005. 'What difference does it make? Digital technology in the theological classroom', *Theological Education* 41/1, 77–91.
- Hinkle-Shore, Mary, 2007. 'Establishing social presence in online courses: why and how', *Theological Education* 42/2, 91–100.
- Hobbes, Robert, 2006. *Internet timeline*, http://www.zakon.org/robert/internet/timeline/ (retrieved 3 February 2008).
- Kurzweil, Ray, 2005. *The singularity is near: when humans transcend biology,* Penguin, New York.
- Miller, Avram, 1998. 'The Fast Pact,' Fast Company,
 http://www.fastcompany.com/magazine/ (retrieved 3 February 2008).

- Netcraft News, 2008. 'January 2008 Web Server Survey', http://news.netcraft.com/ (retrieved 3 February 2008)
- Nysse, Richard W, 2004. 'Online education: an asset in a period of educational change,' in *Practical wisdom: On theological teaching and learning,* ed, Malcolm L. Warford, Peter Lang, New York, 197–214.
- Ong, Walter, 1967. The presence of the Word: some prolegomena for cultural and religious history, University of Minnesota, Minneapolis.
- Pew Internet and American Life Project, 'Internet: the mainstreaming of online life', *Trends 2005: a look at changes in American life*, 57–69, http://www.pewinternet.org/ (Retrieved 3 February 2008)
- Pomeroy, Robin, 2007. 'Jesuits say take word of God to Second Life', http://www.reuters.com/ (retrieved 3 February 2008)
- Prensky, Marc, 2001, 'Digital natives, digital immigrants', *On the Horizon* 9/5 (October) 1-6. http://www.marcprensky.com/writing/ (retrieved 3 February 2008).
- Robinson, Clarence A Jr, 1994, 'Bioelectronics computer era merges organic, solid state', *Signal* (February), 15–17.
- Star Trek: First Contact, 1999. Paramount Pictures, California, http://www.youtube.com/
- Stearns, Peter N, 1996. *Millennium III, century XXI: a retrospective on the future,* Westview, New York.
- Sweet, Leonard, 1999. Soul tsunami: sink or swim in new millennium culture, Zondervan, Grand Rapids, Michigan.
- The Times of India, 50 Inventions that changed the world, http://timesofindia.indiatimes.com/ (retrieved 3 February 2008).
- Weigel, Van B, 2002. Learning for a digital age: technology's untapped potential to enrich higher education, Jossey-Bass, San Francisco.
- Wesch, Michael, 2007. *Introduction to cultural anthropology*, Kansas State University. Kansas, http://www.glumbert.com/media/visionstudents [retrieved 3 February 2008]