

Do Digital Natives Need Libraries?

Dr Barbara Combes



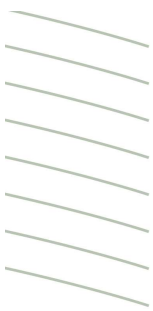
Do digital natives need libraries?

Australian and New Zealand Theological Libraries
Association (ANZTLA) 2017

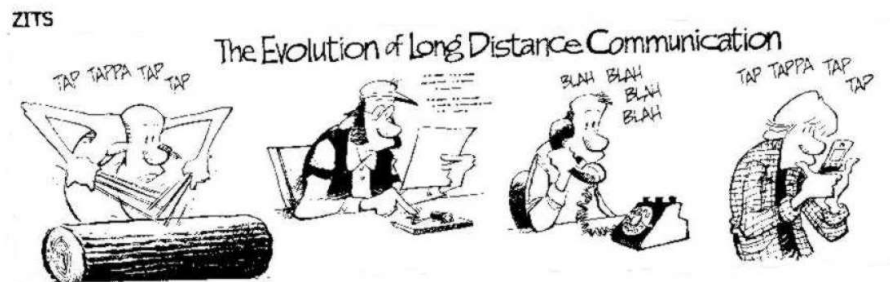
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School of Information Studies



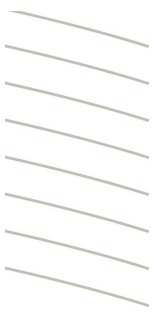
What is a digital native?



By Jerry Scott & Jim Borgman

What is a digital immigrant?





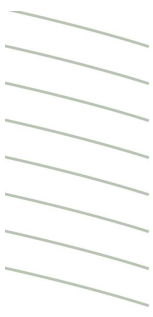
Technology, devices, stuff



By Jerry Scott & Jim Borgman

Timeline

- 1984 – first email in Germany
- 1989 – Tim Berners Lee invents html coding protocols - makes the World Wide Web (WWW) possible.
- 1991 – CERN introduces the WWW to the public
- 1993-94 – first web browsers appear, Mosaic and Netscape
- 1995 – public domain Web goes live in the USA
- 1997 – public domain Web is available in Australia
- 1998 – blogs first appear, Google begins
- 1999 – peer-to-peer file sharing, Napster
- 2000 – dot-com bubble bursts
- 2001 – Wikipedia launched, terms digital native and digital immigrant appear, Marc Prensky 2004 – Facebook goes online
- 2005 – YouTube launches
- 2006 – Twitter launches
- 2017 – WWW and public access to the Internet is 20 years old in Australia



Digital natives or digital refugees



Research

- Children born into Generation Y (>1990, original natives), believe the younger generations understand and use technology better than they do.
- Common terms - tech-savvy, computer-savvy, Internet-savvy.
- Early work - observation of what young people appeared to be doing, rather than what they were actually doing.
- Result – popular literature and quasi academic literature about the digital native, Generation Y, Millennials, Generation Z.
- Digital natives – coined in 2001, term still has resonance with politicians, educators and the general public.
- Another term – digital refugees (Scanlon, 2009).

Digital natives or digital refugees



Research

Digital native attributes

- Young people have an innate aptitude for using technology.
- They are able to multi-task and use technology in innovative ways.
- Use technology for connectivity and social engagement.
- Technology exposes them to a wide range of ideas and cultural differences, thus leading to a more socially inclusive outlook.
- Access to information via the Internet and electronic resources leads to a greater knowledge base which means independence and the ability to question and confront information.
- Digital natives are preoccupied with free expression and have strong views, a result of being exposed to a lot of information on the Internet.

How do the natives really use technology?

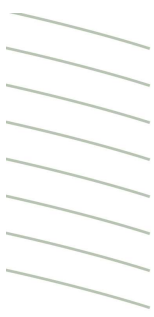


By Jerry Scott &
Jim Borgman

Digital natives or digital refugees

Research (Combes, 2009)

- Digital native is a myth.
- Young people do not use technology any differently from older people.
- Very confident when using technology – adopt a play and learn learning strategy. They teach themselves how to use it.
- Use technology very superficially.
- Adapt technology to suit their needs.
- Do not have a deep understanding of how it works.
- Susceptible bad aspects of technology due to ignorance, including:
 - cyberbullying and trolling;
 - phishing, poor security and safety; and
 - copyright and plagiarism.



Digital natives or digital refugees



Research (Gulatee & Combes, 2016)

- Conducted in Thailand, comparison with 2012 study.
- Young people use technology to diarise their lives eg. food porn.
- Do not use new technologies – cost factor.
- Use technology to stay in touch with family and friends.
- Use mobile technology and social media apps to conduct online education, eg. Facebook live
- They teach themselves how to use it.
- Do not have a deep understanding of how it works.
- Susceptible bad aspects of technology due to ignorance, including:
 - cyberbullying and trolling;
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 - copyright and plagiarism.

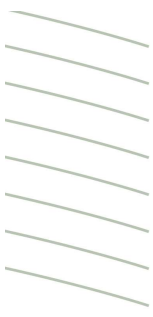
Digital natives or digital refugees



Research (Gulatee & Combes, 2016)

Conclusions

- Not much has changed since 2009.
- Young people use technology in a similar way.
- Use is superficial – young people use technology primarily for connectivity, entertainment and ego publishing.
- Issues:
 - Use technology as a toy not a tool for learning or information-seeking.
 - Use \neq expertise in how to use the technology effectively, efficiently or ethically.
 - When the consequences of using the technology are serious, then this lack of understanding and expertise is also serious.



Digital natives, stories & information Charles Sturt University

The digital native is a myth that continues to drive educational policy and affect how people use technology.

Major implication – we do not teach children or young people how to use it in schools because they already know.

Teach themselves – using trial and error based on success – very powerful pedagogy.

Come to school with a culture of technology use based on habit.

Everyone does the same thing!

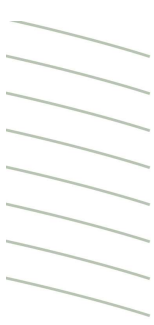
Digital native story



Demonstrates how a belief in misinformation can have dire consequences for those who believe the myth.

Perpetuated by the public media, belief in the idea of a digital native has led to an overwhelming oversimplification of an increasingly complex and shifting information landscape.

Pre-Internet/WWW a simple information landscape, defined by traditional boundaries and dichotomies such as fiction and nonfiction, and spaces such as libraries where we could access information, with help provided.



Information in the 21st century



So what changed with the advent of the Internet/WWW?

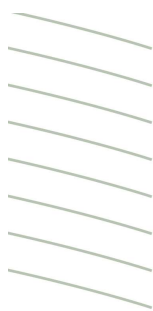
- Information has become widely available to everyone at the touch of a button.
- Anyone can be an expert or famous.
- Everyone can publish an opinion or bias.

Information in the 21st century



Interesting perceptions/beliefs:

- the WWW contains all information;
- it is a one-stop-shop for all information;
- everyone can find the information they need, and interpret and use it;
- no-one needs to act as a mediator (no information managers required - thank you);
- all information on the WWW is free;
- all information on the Web is good information;
- technology is the solution to our information and therefore, our educational needs; and
- age matters!



Information in the 21st century



Current trends for libraries - negative:

- withdrawal of funds for staffing, infrastructure and collections for cultural repositories, and public access to free information agencies (libraries, museums, art galleries, archives);
- withdrawal of teacher librarians in schools;
- withdrawal of traditional services such as mobile libraries and services for the aged and disabled;
- Govt. and business services and service delivery only available online; and
- education and training available wholly online and freely available (MOOCs) ie. no discernible costs.

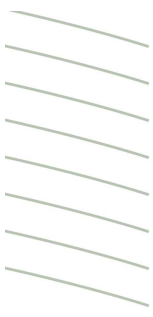
Information in the 21st century



Current trends for libraries - positive:

Business and Govt. beginning to realise:

- the enormity of information overload and digital records;
- that digital records require managing and personnel need help with access;
- difficulties with electronic storage and the ongoing integrity of information, especially digital information;
- the importance of information and the information culture of an organisation to continued economic success;
- ongoing issues with the security of information;
- the cost and sustainability of technology; and
- rapid change that is a characteristic of this landscape.



Information in the 21st century



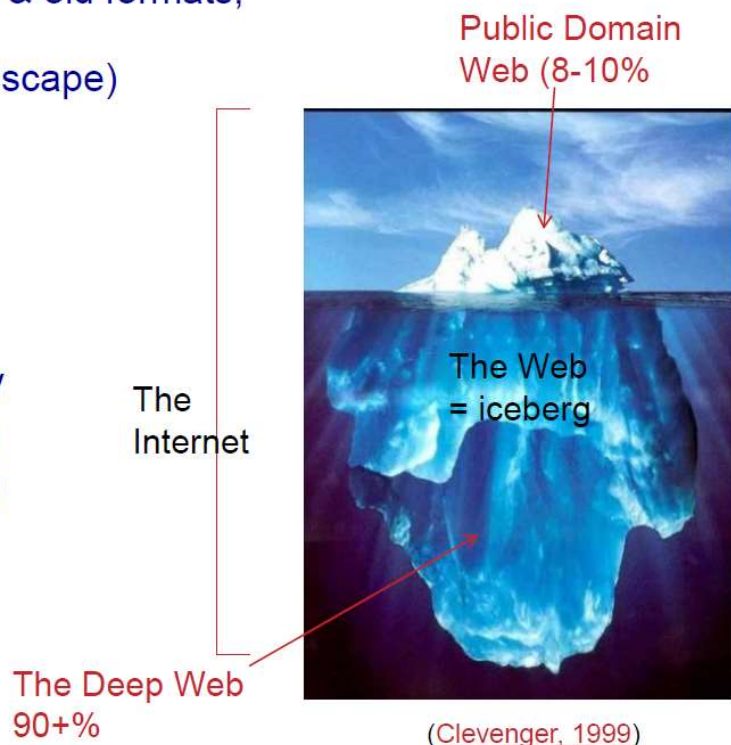
So what does this information landscape look like?

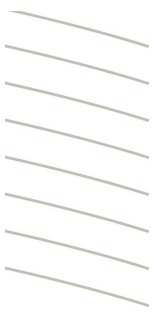
Information in the 21st century



A dynamic information landscape characterised by:

- Technological change (new & old formats, delivery modes)
- Differentiation (layered landscape)
- Overload
- Complexity
- Density
- Decontextualisation
- Access 24/7
- AI enhanced & user friendly
- Faster, smaller, convergent
- > Storage, cloud computing
- Easy manipulation
- Multimodal
- Multimedia
- Interactive

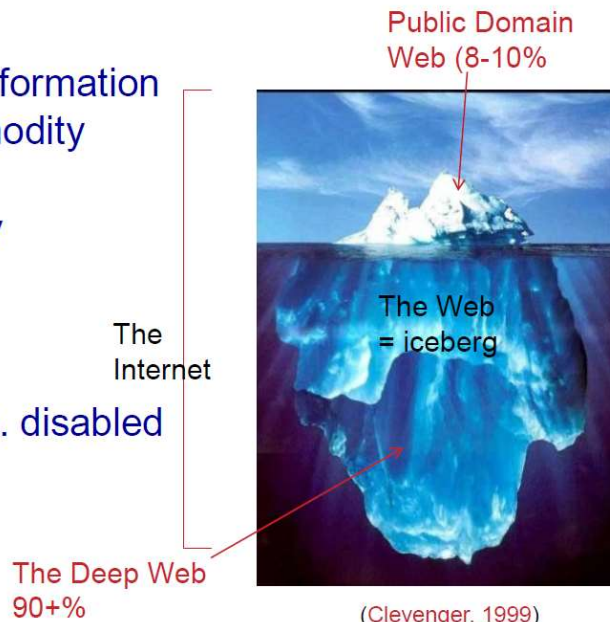




Information in the 21st century

A dynamic information landscape:

- Internet2
- Restricted access to information
- Information as a commodity
 - copyright
 - intellectual property
- Hidden costs
 - privacy issues
 - security issues
 - equity of access eg. disabled

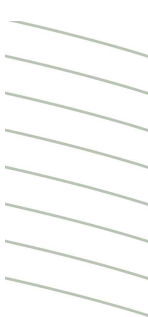


(Clevenger, 1999)

Information in the 21st century

Technologies:

- Multipurpose/functional mobile phones: iPods, Blackberries, iPhones
- Kindles, iPads, eBook readers
- Digital cameras, video cameras
- Flash drives, mobile memory, USB sticks, “the cloud”
- Laptops, tablets, notebooks, notepads
- Thin client technology
- Wireless, bluetooth
- Multi-user Web conferencing, Adobe Connect, online/flipped classrooms
- Learning Management Systems, BlackBoard/WebCT, Moodle, LAMs ...
- LMS (Library Management Systems)
- 3D, stereophonic, haptic sensory devices, ...



Information in the 21st century



Web 2.0 Utilities to ensure your complete happiness!

Get Totally Wired In - Sign Up for ALL of These Sites Today!

SITES YOU MUST BE ON FOR COMPLETE HAPPINESS

SITES YOU MUST BE ON FOR COMPLETE HAPPINESS

Ludwig Gatzke.

Information in the 21st century



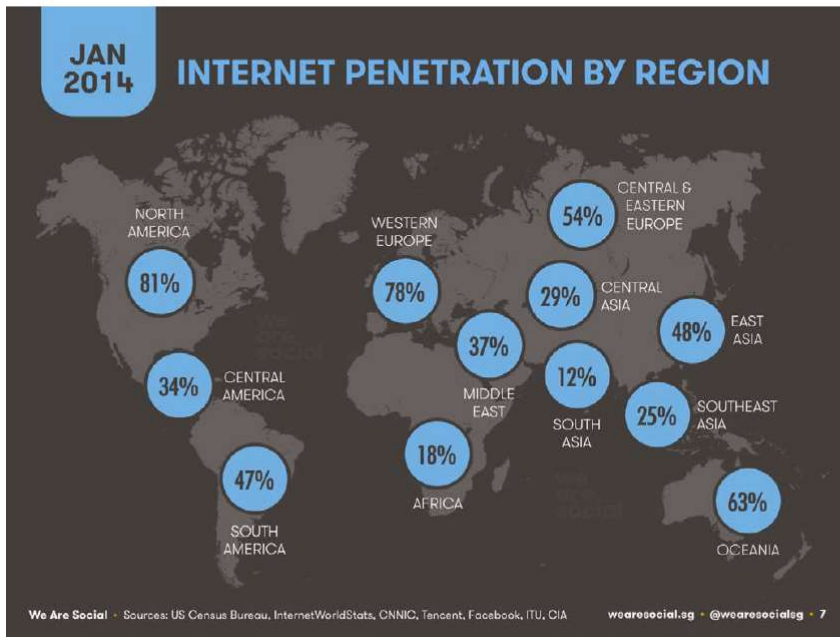
Web 2.0 Utilities – Interactive – Social - Public domain - One-to-many

- [RSS Feeds](#)
- [Twitter](#)
- [Nings](#)
- [Jing](#)
- [Wikis](#)
- [Blogs](#)
- [Voicethread](#)
- [Diigo](#)
- [Flickr](#)
- [Pinterest](#)
- [Weebly](#)
- [Instagram](#) ...

web 2.0

Batac, A.J.

Information in the 21st century



Large numbers of people do not have access to the Web.

Access =

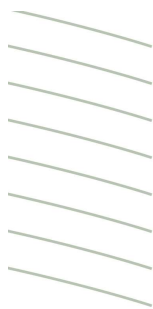
- Physical access =
 - infrastructure;
 - technology.
- Cognitive access =
 - finding information;
 - being able to read and interpret it;
 - being able to use and re-purpose it.

Simon Kemp

Information in the 21st century

Utilities:

- Internet2, Internet3
- Web 2.0, Web 3.0, Web 4.0
- Facial recognition
- Aggregator software (Spokeo)
- Tracking, GPS or locator software
- Virtual worlds
- Multimedia, simulations, gamification, ...
- eBooks, vooks, digidocs,



Students in the 21st century



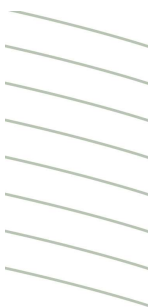
Assumptions:

- Digital natives vs digital immigrants or just digital refugees
- Computer literate?
- ICT literate?
- Digitally literate?
- Internet/network literate?
- Information literate?

Literacy in the 21st century



- Traditional literacy
- Computer literacy
- Critical literacy
- ICT literacy
- Internet/network literacy
- Screen literacy
- Multimedia literacy
- Digital literacies?
- Visual literacy/discrimination
- Information management
- Information inquiry literacy?
- Transformational literacies? Transliteracy?
- Metaliteracy
- Higher order thinking - analytic and synthesis (making meaning)



Literacy in the 21st century



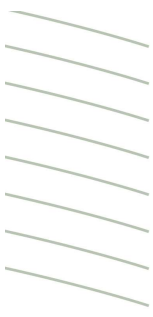
- Academic literacy
- Business literacy
- Cultural literacy
- Workplace literacy
- Music literacy
- Science literacy
- Critical literacy
- Media & information literacy (UNESCO)
- Technology literacy
- Adult literacy, aliteracy
- Lifelong learning
- Lifewide learning
- Just-in-time learning
- Formal learning
- Informal learning

Information literacy in the 21st century



<p>Working with Information Being able to:</p> <ul style="list-style-type: none"> • locate information using a range of sources and delivery modes; • authenticate/evaluate information (establish authorship, veracity, authority, recency, relevance) • skim and scan, make notes; • filter unwanted, inappropriate or information that is not useful • reference (intext and end of text); • understand and use information appropriately/legally (copyright, plagiarism, intellectual property, privacy, security) and ethically; • use a range of technologies to present information (consider facilities of technology, design, layout) in a variety of forms (visual, oral, textual) and delivery modes (print, audio, Web 2.0, multimedia, website); • understand and apply ethical and appropriate use – copyright, creative commons, privacy, intellectual property; • understand and apply cultural diversity and sensitivity; • demonstrate the attributes of a Global Digital Citizen – netiquette, use of language, considered use of multiple tools; and • workplace information literacy – transitioning to a new workplace (accessing career information, job sites, being able to write a CV, conduct an interview, know who to ask for information, learning in the workplace). 	<p>Managing Information Being able to:</p> <ul style="list-style-type: none"> • use a range of resources, formats and delivery modes (text, print, pictorial, oral, human, multimedia, online, electronic); • use a range of information management tools and technologies (email, electronic file structures, indexes, contents, catalogues, databases, citation tools, online curation tools); • categorise, collate and store information for later use; retrieve information stored for later use; • work collaboratively in a team, roles; • manage time, meet deadlines, create work schedules; • select and use convergent devices to meet an information need – mobile devices, apps; and • understand how new developments in technology affect information management – the cloud, digitisation, data integrity and preservation.
<p>INFORMATION LITERACY Competencies, skills, making meaning & thinking</p>	<p>Communicating Information Being able to:</p> <ul style="list-style-type: none"> • communicate effectively and efficiently using a range of media (including print) across a variety of formats and delivery modes; • recognise, understand and apply appropriate language conventions using a range of media and across a variety of formats and delivery modes; • understand and apply appropriate privacy, communication and copyright laws to all forms of communication; • understand and apply appropriate cultural sensitivity to all forms of communication; • understand and apply workplace knowledge and conventions to all forms of communications; and • understand and apply rules of netiquette/online/email etiquette.
<p>Thinking about information Being able to:</p> <ul style="list-style-type: none"> • ask the right questions to begin an information enquiry, problem-solving; • develop an hypothesis or line of inquiry; • concept/mind map to establish scope of inquiry; • interrogate, analyse, information – understand and make meaning, interpret; • deconstruct information and meaning using a range of resources, tools, technologies; • substantiate/support your argument; • reconstruct understandings to develop new information-knowledge; • transfer thinking and information skills to solve new problems; and • understand other terms – lifelong learning, life-wide learning, formal vs informal learning, just-in-time learning. 	<p>Literacy making meaning Being able to:</p> <ul style="list-style-type: none"> • develop/practise language literacy skills – reading, writing, viewing, listening & understanding; • develop/practise online literacy skills, interrogating information on screen, iconic literacy, digital literacy, multimedia literacy, ...; • develop/practise visual/image discrimination and interpretation, ...; • develop/practise technology literacy skills - computer literacy, ICT literacy, Internet/network literacy, ...; • develop/practise graphical interpretation, numerical literacy, statistical literacy, ... and • understand other literacy terms – transformative literacy, ecological literacy, meta-literacy, critical media literacy, adult literacy, aliteracy, illiteracy, media and information literacy (UNESCO), academic literacy, ...

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Why do we need libraries?



The idea of the digital native is a myth.

Everyone uses technology in similar ways, especially for information-seeking.

The rate of development of technology often inhibits expertise.

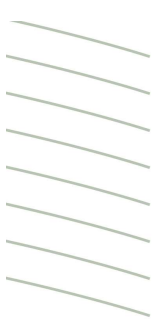
The information landscape is complex, shifting and undergoing constant change.

How complex is it?

Information landscape



- Floridi calls this new information domain the infosphere, which includes all informational entities and their agents, properties, interactions, processes and mutual relations.
- The infosphere includes cyberspace as well as offline and analog spaces of information.
- The infosphere is an environment that is continually evolving.
- Information communications technologies (ICTs) and the convergence of technologies are 'reontologizing' (a very radical form of re-engineering) the very nature of the infosphere (Floridi, 2007).



Information landscape



Information landscape = infosphere

Information landscape includes:

- all information in all its forms, undifferentiated by delivery mode;
- the humans who inhabit the landscape, intervention activities, developments in technology, ideas, cultures of use and attitudes; and
- old technologies and information that exists in older formats (information artefacts such as print, DVDs/video, radio, television).

Information landscape

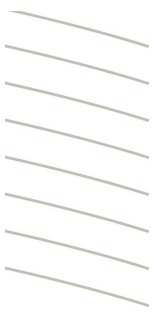


The information landscape of the twenty-first century is:

- a very complex and evolving concept; and
- currently populated by new and old information artefacts and people.

Both of these characteristics ultimately change the structure of the landscape itself and how society views it.

Therefore developments in technology affect the landscape and the humans who inhabit it and vice versa.



Confusion abounds!



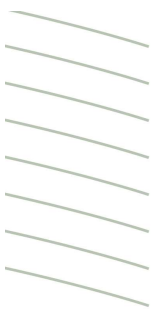
The information landscape can be very confusing place.

- Multiple use of terms is changing the meaning of language eg. literacy, friend.
- Multimedia presentations eg. simulations, real-life simulations, docu-dramas, dramatised documentaries, mockumentaries and documentaries.
- Commercials, infomercials, edu-mercials.
- Entertainment, reality TV, virtual reality/life games, virtual worlds, edutainment and infotainment.
- Print – fiction, nonfiction, faction, real-life stories, true stories, authorised and unauthorised biographies, and autobiographies.

More confusion – social media



- Diarising/ego publishing: Facebook, blogs, Tumblr., VK, MeetMe, ask.fm, Tagged, Friendster, MySpace...
- Online communities: Ning, ConferenceNet, ...
- Decontextualised information/communication: Twitter, RSS Feeds, SnapChat...
- Visual ego publishing: Flickr, Instagram, Pinterest, ...
- Multimedia publishing: YouTube, TeacherTube, Voicethread,
- Self-publishing: Jing, Podcasts, Vodcasts, Wordpress, Weebly, wikis, ...
- Professional networks/PLNs: LinkedIn, Academic.edu, Classmates, BizNik, Entrepreneur Connect, ...
- Bookmarking/curation: Delicious, Diigo, Librarything, Shelfari, Goodreads, ...



Information behaving ...



How does this landscape and how we use and perceive it affect information?

Assumptions we make about information:

- objective information is valuable (true?, fact?);
- objective information can be transmitted out of context and retain its inherent properties; and
- more information is better (Dervin in Case, 2002).

Dervin's 10 dubious assumptions we make about information appeared in the research in the 1970s.

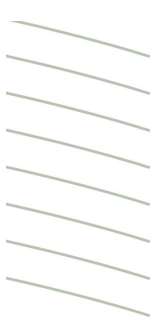
Information behaving ...



How does this landscape and how we use and perceive it affect information?

Assumptions we make about information:

- old fashioned information artefacts have the same properties as new information forms;
- delivery mode or technology is confused with the information resource;
- attributes associated with the technology have become associated with the information it stores and delivers, and vice versa; and
- information in the new landscape behaves the same way as information delivered/stored using more traditional methods.



Information behaving ...



How does this landscape and how we use and perceive it affect information?

- 2 characteristics which are contradictory in nature.
- Shenton calls this a paradox (2007).

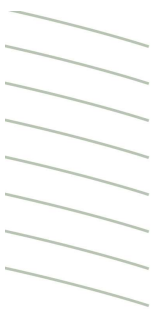
Information behaving ...



How does this landscape and how we use and perceive it affect information?

Characteristic 1 - information is incredibly solid:

- text is perceived as having authority and value – traditional perception;
- may appear in multiple locations and publications, in different formats and via different delivery modes – more authority/must be true/good;
- how we publish on the Web – confusion between information and advertising;
- greater longevity – recirculated/regurgitated; and
- almost impossible to delete – due to the nature of the Web.



Information behaving ...



How does this landscape and how we use and perceive it affect information?

Characteristic 2 - information is incredibly fluid

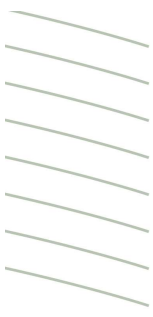
- information can be copied, pasted, slightly altered and disseminated widely – Chinese whispers;
- appears in a variety of formats and via different delivery modes – formal, abridged, informal/social contexts;
- often picked up by followers who transmit it around the landscape with ease; and
- recirculated/regurgitated – continues to be alive, one set of users leaves and another logs on.

Information behaving ...



The way information behaves and how we perceive it is inextricably connected to:

- the technology and the delivery mode;
- how we first learn to access information:
 - reading print,
 - teaching ourselves how to use technology – culture of technology use;
- the influence of social commentary & opinion vs research:
 - locked away journals and Deep Web and inaccessible,
 - research and education using social media (24/7 business model); and
- corruption of terms and language – catchy labels that have resonance.



Paradox



Information is both solid and fluid in this landscape.

- Our perceptions are shaped by the nature of information in this landscape and the baggage we bring with us.
- How we interact with it is also shaped by the technology and how we use it.

Shenton's fourth paradox

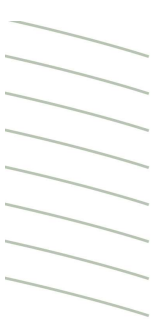
Despite the sophistication of today's information age, youngsters frequently follow a basic formula for action when finding and using information (Shenton 2007).

Not just young people – everyone!

Repercussions



- Education:
24/7, free?, wholly online, devalued, business model.
- Equity of access:
Costs, physical access to technology, cognitive access to information, education, service/s delivery wholly online.
- Assumptions:
We don't teach students how to use technology or how to engage critically with this landscape – digital natives so they already know.
- Disempowerment:
Oversimplification, state of flux, culture of technology use, control.



Other issues



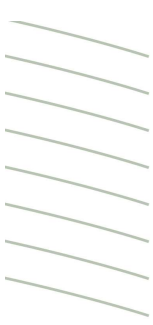
Reading and making meaning from text on screen:

- we read screens differently to print;
- suffer from eye fatigue;
- miss information;
- not for people who cannot read or who have limited level of literacy;
- 44+% of Australians = literacy level 2, level 3 = graduation from high school;
- reading is not intuitive, a skill that must be maintained, ie. continually practised.

Other issues



- The WWW (how we access the Internet) is 20 years old in Australia.
- It is actually very young in research terms.
- We haven't had time to research thoroughly the effects of technology on society.
- Current research is published as another set of new technologies emerges.
- Public opinion is shaped by observation, opinion and ego publishing in this environment
- Young people do adapt and use technology in ways the creators did not foresee.
- Constant state of change.



Why have a library?



Libraries contain:

- Information in multiple formats and delivery modes.
- Provide community spaces , in schools safe haven.
- Provide access to a trained information specialist (aka librarian/teacher librarian).

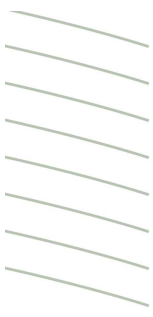
New vs old names



Names/titles:

- Libraries;
- iCentres;
- Learning Commons;
- Information Centres;
- Cybrary;
- eCentres;
- Media Centres ...

Public, school, TAFE/VET, academic, special (law, medical, art, science, architecture, parliamentary, veterinary,...), archives, museums, records office



New vs old names



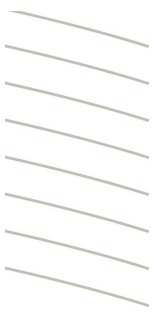
Names/titles:

- Teacher Librarian, Library Media Specialist;
- Corporate Information Officer; Chief Information Officer;
- Recordkeeper; Information Management Officer;
- Librarian; Systems Librarian;
- EDRMS Officer; eLearning Developer;
- Information Systems Manager/Coordinator;
- Information Management Analyst;
- Information Services Manager/Officer;
- Digital Services and Information Manager;
- Information Coordinator/Officer
- Information Specialist
- Library Technician

Information seeking



- Information seeking must be one of our most fundamental methods for coping with our environment.
- The strategies we learn to use in gathering information may turn out to be far more important in the long run than specific pieces of knowledge we may pick up in our formal education and then soon forget as we go about wrestling with our day-to-day problems. (Donohew, Tipton & Harvey, 1978, cited in Case, 2002, p.17).
- The influence and ubiquitous use of technology at every level of society has affected the way we find information that meets our needs (relevant) and how we use it.



A brave new world?



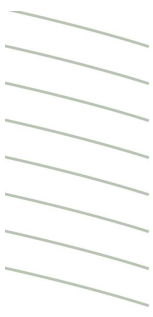
- Historically, libraries have always been at the forefront of technology and information management.
- How we perceive libraries and the hype surrounding the WWW and access to information has changed.
- Libraries and librarians have a poor image.
- Ignorance about the information landscape abounds due to lack of teaching in schools.
- Information specialists and managers will be needed to cope with the complexity and overloaded nature of the evolving landscape.
- Complexity, overload and density will increase at an exponential rate for some time to come (Moore's Law).

A brave new world?



Changing perceptions and public opinion will take time.

- We may lose cultural heritage/knowledge.
- We already have a generation or more of disempowered users/citizens.
- We have already lost privacy and security of information.
- We are losing people with LIS skills.
- We don't have future proofing/succession planning in place.



A brave new world?



Solutions?

- Need to educate future generations.
- Australia needs to value its cultural heritage and education for all citizens.
- We need future proofing/succession planning in place.
- Grass roots approach?

Technology & education

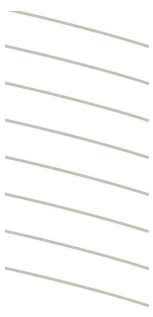


Initiatives by both Government and educational policy makers in Australia have been described as part of the 'digital rhetoric' where ICTs are defined as the main driver for innovative education and training systems (Buchanan, & Chapman, 2009).

Like Western governments worldwide, in Australia computing technologies are considered a motherhood solution to the needs of a highly skilled and technologically capable workforce (Baskin & Williams, 2006, p.455).

The labels and attributes assigned to young people have resulted in the marginalisation of teachers and anyone else who doesn't exhibit the skills assigned to this generational group (Stoerger, 2009).

The idea of a digital native is a myth that has continued to have resonance due to the nature of the information landscape and how society perceives this environment.



Thoughts ...



What a school thinks about its library, is a measure of what it thinks about education. ~ Harold Howe, former U.S. Commissioner of Education

Whatever the cost of our libraries, the price is cheap compared to that of an ignorant nation. ~ Walter Cronkite

Information cannot replace education. ~ Earl Kiole

A library is not a luxury but one of the necessities of life. ~ Henry Ward Beecher

Libraries enable the past to talk to the future. ~ Edward Cornish

The medicine chest of the soul. ~ Inscription over the door of the Library at Thebes

Question ...



Do digital natives need libraries?

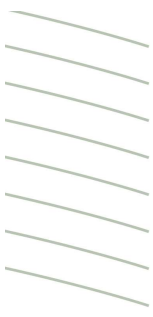
Yes they do – more than ever!

A single pot of facts will not graduate students who have the knowledge and capacity to deal with life after school in the current information landscape.

These skills are included in the General Capabilities of the Australian curriculum.

Most teachers do not teach or embed information literacy skills into their curriculum programs which are content-focused and determined by exams/tests.

Information literacy skills are not tested by NAPLAN either.



Question ...



The teacher librarian is the information specialist in the school.

Their teaching role includes literacy and information literacy learning outcomes.

They work at the General Capabilities/cross curriculum outcomes of the curriculum.

Does your school have a library that has a teacher librarian?

Does your school utilise this person's expertise?