

Generation Y: Are they really digital natives or more like digital refugees?

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Since the post-WWII period, social anthropologists and the popular media have created catchy labels and assigned an associated list of attributes or characteristics for each new generation. Social commentators vary slightly in the labels assigned to each generation and the length of time each generation lasts, but they are all agreed that there have been several defined groups that have emerged during the last century. There is the G.I. Generation (1900-1924), the Silent Generation (1925-1945), the Baby Boomers (1946-1964), Generation X (1965-1979), the Millennials or Generation Y or the Net Generation (1980-2000) and Generation Z (2001-present) (McCrinkle Research, 2008).

Generation Z is the newest generic label to be assigned, but are included in the group known as the Millennials, Net Generation or Generation Y for the purposes of this study. While Generation Y is given a variety of start dates by social commentators, this study uses the introduction of the Internet Domain Name System (DNS) in 1984 as a starting date, with an end date that is ongoing.

Generation Y theorists and social commentators make a number of startling claims about this generation that are in stark contrast to social commentary describing previous generations. Previously, attributes and characteristics of each new generation were based on personal values: attitudes to work, politics, and leisure; and changing fashion in clothes and music. However, with Generation Y, social commentators have assigned a range of skill-based attributes, based on the premise that constant exposure to technology from birth automatically means young people must be able to use it to find and use information effectively.

Generation Y theorists claim that children born after 1984 have an in-depth grasp and almost 'intuitive' knowledge of how to use technology, simply because they have never known a world without the Internet and technological change. It is interesting to note that this theory first

appeared in 1998 in the popular press in the publication, *Growing up digital: The rise of the Net Generation* by Donald Tapscott (Tapscott, 1998). Even though this title was published ten years ago, the idea of a tech-savvy or Internet-savvy generation has persisted. The longevity and persistence of this idea of a tech-savvy generation is due to the ubiquitous and global nature of the Internet, which has been used as a publishing and marketing tool. So this title was not only available in print, but excerpts were also freely available on the web.

In 2001, Marc Prensky took the theory a step further and first coined the terms 'digital natives' for members of Generation Y and 'digital immigrants' for anyone born before the Internet and ICTs became such a major part of the information landscape (Prensky, 2001). These descriptors have been picked up by all forms of the popular media and even taken seriously by academics. Recently, two Harvard academics, Palfrey and Gasser, released a publication based on the Generation Y theory, extolling teachers and senior education administrators to re-think how they cater for young people in education (Palfrey and Gasser, 2008). Thus this idea of a tech-savvy generation of effective and efficient users of technology has become established in serious research and the popular press.

While there is no doubt that technology has affected and continues to affect the way we live and influences nearly every aspect of our daily lives, the idea of a generation of tech-savvy users requires closer analysis. These labels and the attributes assigned to Generation Y first appeared during the first flourish of the Internet and long before any serious research about the Internet and social-cultural consequences had occurred. While evidence from schools and emerging research studies suggest that young people are not using technology as espoused by the Generation Y theorists (Barr, 2006; Branch, 2003), the labels and the idea still persist, even though the information landscape has radically altered

Recent research indicates that Generation Y is not as tech-savvy as is often portrayed. If this is the case, then assumptions about information-seeking behaviour of today's students need to be re-assessed This paper discusses some of the findings of a PhD study on the information-seeking behaviour of Generation Y and the need for schools to become more involved in teaching students how to use the electronic environment effectively.

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since they were first introduced over ten years ago.

It is vitally important that educationalists don't make assumptions about this generation and its level of expertise when using electronic resources to find information. Governments and information agencies worldwide are currently employing digital initiatives which will ultimately make all government information and services transparent and publicly available via e-government web portals. Digital information repositories are also a feature of the corporate world, as the almost ubiquitous use of technology in the workplace produces an ever increasing amount of information. The endorsement of environmentally-friendly solutions to information storage also makes digital solutions very attractive.

Supporters of e-government solutions argue that digital information is more cost effective, easier to store (takes up less space), easier and faster to produce, easy to manipulate and with search engine technology, easier to locate. The latest policy document from the Commonwealth Government also maintains that Australians want service delivery using this delivery mode (Commonwealth Govt, 2008). Governments also argue that information accessed by electronic means is catering for the next generation which, according to Generation Y theory, prefers and already has the skills to access information in this format. For citizens in the twenty-first century, government and public information is increasingly being published only in digital format. Being able to locate, interpret and use this information is going to be an essential skill set for citizens in the future.

Thus, assumptions currently being made about the information-seeking behaviour of today's students need to be re-assessed at both the systemic and the school level to ensure that tomorrow's citizens do not become the digital refugees of the future. Future proofing for both the current and future generations is essential in a world where governments are increasingly committed to the provision of essential services and information wholly online. This paper discusses some of the findings of a much larger PhD study on the information-seeking behaviour of Generation Y and the need for schools to become more involved in teaching students how to use the electronic environment effectively. This research is based on the premise that we need to know exactly what young people are doing when navigating the Internet/web if we are going to cater adequately for their educational and social needs as they become twenty-first century citizens.

Generation Y

According to the Generation Y theory, members have a range of attributes and skills that sets them apart from previous generations. Their

increased access to information via the Internet and electronic resources gives this generation a greater knowledge base which fosters independence and the ability to question and confront information (Tapscott, 1998). As a result of being exposed to a lot of knowledge on the Internet, members of this group are more socially active, responsible and discerning users of information, and they are preoccupied with free expression and have strong views (Tapscott, 1998). Members of Generation Y know what they want and have greater digital literacy skills (Skiba, 2003; Oblinger & Oblinger, 2005); are intuitive visual communicators, who have strong visual-spatial skills and are readily able to integrate the virtual with the physical world (Oblinger & Oblinger, 2005). They are exploratory learners and therefore develop skills which enable them to retain information and use it in innovative ways (Skiba, 2003; Dorman, 2000; Oblinger & Oblinger, 2005). "Students feel they know how to find valid information on the Net" (Oblinger & Oblinger, 2005). Multi-tasking, a craving for connectivity and social engagement, the ability and a propensity to use a wide range of technologies allows the Generation Y to communicate with a broad range of users and exposes them to a wide range of ideas and cultural differences, thus leading to a more socially inclusive outlook (Tapscott, 1998; Dorman, 2000).

The basic premise of the Net Generation theory, that familiarity with technology equates with efficient and effective use and these achievements are only applicable to a specific group because they have grown up with technology, is flawed. Does this mean that children born into an era where cars are the ubiquitous mode of transport will therefore not only drive, like driving, but also be good drivers simply because they have never known a landscape that is different? The theory also ignores the changing nature of technology, which has in turn produced an information landscape that is increasingly complex and populated by old and new information forms and technologies that require multiple skills to interrogate successfully. Much of this literature hinges on the work of social commentators such as Tapscott and Prensky and is observational rather than research based on rigorous research method.

Tapscott makes sweeping statements about the abilities of Generation Y and gleefully recounts how children are showing adults how to use the Internet (Tapscott, 1998, Skiba, 2003). This commentary implies that young people are socially active, responsible and discerning users of information technologies. Indeed, Generation Y as a group has been variously described as tech-savvy, web-savvy and Internet-savvy. Of major concern is the appearance of these terms in a number of major educational reports, including *Toward a New Golden Age in American*

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Education (U.S. Department of Education/Office of Educational Technology, 2004); *Voices & Views from Today's Tech-Savvy Students*, part of a national report sponsored by the non-profit group NetDay (NetDay, 2004; Murray, 2004); and the Australian Curriculum Corporation's report from the Le@rning Federation (Curriculum Corporation, 2005).

The assumptions enshrined in these systemic educational policies have meant that virtually no funding has been allocated to training for teachers or students; there is no recognition that these skills need to be actively taught in schools as part of the curriculum; and there is a real belief that technology is a solution rather than a tool. This type of thinking is particularly evident in the current Prime Minister of Australia's 'computer for every child' policy which does not include training for teachers, and the latest draft policy document for the digital economy (Commonwealth Government of Australia. (2008).

Other research studies

Generation Y theory contradicts traditional information theory which contends that information-seeking behaviour is a complex activity that is affected by cultural, educational and social contexts (Case, 2002). Anecdotal evidence from schools and public libraries has long suggested that, while young people actively use technology, they do not use it as described by the Generation Y theorists. In recent years there has been an emerging body of research on how young people from Generation Y use technology for information-seeking (Banwell, & Gannon-Leary, 2000; Barr, et. al, 2006; Combes, 2006 & 2007a; ETS, 2006; Fallows, 2005; Livingstone, et. al., 2005; Nicholas et. al. 2008) that largely debunks the myth of an intuitive user who is capable of using electronic resources to find information, a fact many teacher-librarians have long suspected.

Detailed, longitudinal research studies on Internet use and the information-seeking behaviour of young people are only now being published. Large scale population studies such as the UK Children Go Online (UKCGO) and the American Pew and Internet & American Life Project indicate that Generation Y theorists do not have all the answers.

UKCGO is a rigorous and timely investigation of 9-19 year olds' use of the Internet (Livingstone & Bober 2004) that is an ongoing, large scale population study. Findings from this study indicate that significant inequalities in access to the Internet still exist, especially home access. The study found that while Generation Y are confident in their abilities and claim greater online skills than their parents, a significant number admit they often can't find their way around the Internet. This finding is also supported by research conducted in educational contexts where the information-seeking behaviour of students from a variety of

age groups has been studied. In two small scale studies, Branch (2003) discovered that students require specific instructional intervention to develop effective information skills. Students were often confused and they found the amount of information on the Internet daunting. As a result, they often experienced significant levels of frustration. One UKCGO study reports:

It seems that 'access' to the internet is not as simple as turning on the computer and clicking on 'Google'. A range of skills, some more complex than others, is required to access the range of online facilities. . . . These skills are variably, and unequally, distributed across the population, with age, gender and socio-economic status all associated with differences in literacy (Livingstone, Bober & Helsper, 2005).

The PEW Internet & American Life Project has conducted studies on Americans' use of the Internet and how teens use technology. These studies produced similar findings to the UKCGO study. While users feel comfortable using search engines and are satisfied with their search results, few users know much about them or use sophisticated search strategies. They trust search engines and the information provided (Fallows, 2005). Even though users admit to knowing little about search engines, they are confident in their ability to use search engines to find information. Teens in these studies also stop searching once they think they have found the answer and have a tendency to rely on single sources of information (Fallows, 2005). The PEW studies also concluded that the majority of teens prefer to communicate with friends on the Internet rather than strangers.

The JUSTEIS project (JISC Usage Survey Trends: Trends in Electronic Information Service) also found that young people rely heavily on search engines to access information. This study concluded that both students and academics used electronic journals and specialist electronic information services infrequently (Griffiths, 2003, Griffiths & Brophy, 2002). Students tended to navigate web sites by clicking on links rather than utilising sophisticated or complex search strategies. This finding is also supported by a number of other studies.

Martoukou (2004) and Fidel et al. (1999) found that students used 'landmarks' or favourite websites as starting points for a search, and regularly used the back button to navigate. Sandvig and Baiwa (2004) found that university students "have a significant preference for using browsing methods (hyperlinks) over search (via search features) and hybrid (combination) methods". Poor searching skills and an inability to know where they are in virtual space (sometimes called Internet or network literacy) was also a finding of the UKCGO studies. Many students do not have the cognitive skills to navigate hypertext (Scott & O'Sullivan, 2005). They browse

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or surf the Internet or use Google to get quick, easy results.

The JUBILEE project also found that students rarely use even simple Boolean logic to refine their search strategies and seem to be disinterested or unwilling to alter their current patterns of information-seeking behaviour. Loss of face and admitting to a lack of knowledge and skill was also posited as a major difficulty for the researchers when collecting data for the project (Banwell & Gannon-Leary, 2000). This reliance on the Internet, coupled with poor search skills and a lack of critical information evaluation skills compounds the problem of poor Internet or information literacy skills. The JUBILEE project also found that the possession of basic IT skills does not necessarily translate into users having comparable information handling skills (Coulson, Ray & Banwell, 2003). Students were confused about the quality of academic resources and regularly failed to find information using the Internet or electronic information services. These studies concluded that "further work needs to be done to equip students with the awareness and skills to use a much wider range of academic information resources and services" (Griffiths, 2003).

These research studies indicate that there is a changing culture of information use amongst the young people of Generation Y. Determining the significance and the various facets of the developing culture of use that surrounds the Internet and how it affects the information-seeking behaviour of young adults is an important objective of this research. It would appear that young adults demonstrate a different culture of use when using technology. This was first observed by Tapscott and social commentators at the end of the 1990s. Hence, a major aim of this research has been to discover exactly what young people are doing when they use the Internet to search for information; to determine if there is a prevailing culture of use; and what this may mean for education.

Method

Three phases of data collection occurred during the research. The first phase included an extensive search of the current research literature. The second phase was an anonymous web survey designed to test the Generation Y attributes and to act as a filtering mechanism to target participants for the third phase. An anonymous survey was also considered to be an essential component of the research design to ensure that the reluctance of young people to admit to having difficulties with technology, as identified in the literature, was also tested.

The Web survey targeted first year students between the ages of 18 and 22 (now the oldest members of Generation Y) across two universities. The invitation was a two-sentence (all that was allowed) challenge to all first years at one

university and on public online bulletin boards at both universities. No follow-up messages were allowed and the survey was only available for three weeks. The final survey dataset numbered 533 participants, with 232 or 43% of the total survey group volunteering to be part of the follow-up study. A further 500-plus students also answered the survey, but fell outside the target age group. The number of students volunteering to be part of the follow-up study and the number of participants overall indicates that both young and older people feel a need to discuss technology and how it affects their lives.

The initial dataset obtained from the web survey was used to develop two metrics to determine the confidence levels (Affective Domain) and technology use (Effective Domain) of participants. It was used to target participants for the second phase of the study. Contrary to the Generation Y theory, it was hypothesised that, in a normal population, there should be participants in all four categories according to their index of 'Net Gen-ness':

1. **LC/LU-NG:** Low Confidence, Low Use Net Gen Attributes
2. **LC/HU-NG:** Low Confidence, High Use Net Gen Attributes
3. **HC/LU-NG:** High Confidence, Low Use Net Gen Attributes
4. **HC/HU-NG:** High Confidence, High Use Net Gen Attributes

The third phase of the study included a semi-structured, in-depth interview and two information tasks, conducted with 40 students who exhibited a range of Net Gen attributes as determined by the above metric. If the Generation Y theorists are correct, all or most of the participants should have emerged in category 4: HC/HU-NG: High Confidence, High Use, Net Gen Attributes.

Forty students who were identified as having certain Net Gen attributes were selected for interview using a random selection technique. Participants were asked to complete two tasks. One had a personal or recreational information-seeking focus (data gathering/finding information for a holiday trip), while the other had an educational information-seeking focus (interpretation and finding information for an essay and tutorial presentation). Hence, both tasks were set in a real life context. Verbal protocols (think alouds) were used to track the participants' information-seeking behaviour and thought processes. Use of the software program *Morae*, allowed the researcher to photograph the participants, record verbal protocols and track their information-seeking on the computer. The software allowed the tasks to be conducted in a less intrusive manner and enabled the researcher to compare participants' body language and dialogue as they verbalised their actions (what they thought they were doing) with their information seeking

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behaviour real time (as it was happening) by tracking and recording their use of the technology.

Wherever possible, the task analysis was followed by the semi-structured, in-depth interviews. The interviewer used a structured interview format and an interview prompt checklist to provide consistency and to act as a quality assurance measure to balance the influence of the novice interviewer during the qualitative data collection (Woodhouse, 2005). During the interviews, participants were asked to rate themselves as an Internet user, how often they used the Internet, why they used it, using technology for study, use of the library and electronic resources, and use of specialist library personnel. They were also asked to rate their information-seeking skills, how they compared with their peers, time spent using the Internet, skills acquisition, what they find easy and difficult about using the Internet to find information, confidence levels and information literacy skills (using information effectively for academic purposes).

Use of Wikipedia and Google, planning, method/s for information seeking and how they use search engines was also discussed. Social-cultural attitudes to technology, the importance of the Internet in their lives, types of technology and how they use it, financial constraints and whether they consider themselves to be multi-taskers were other aspects covered during the interviews. Data collected during the empirical study, the task analysis and the in-depth interviews were then analysed using an interview checklist and a recording marker system in the *Morae* software to determine the information-seeking behaviour of individual participants. Analysis of the data will provide an in-depth snapshot of how this particular group of Generation Y students are seeking information using the Internet/Web.

Findings

A cluster analysis was conducted on the web survey dataset which revealed no significant clusters for this particular group of users. Few participants could be easily identified as HC/LU and LC/LU. Participants selected for interview from these two groups often exhibited only one of the descriptors and had a mean value for the other. A major finding from the anonymous web survey is that there are no significant clusters in this group. The way participants are using technology, the types of technology they are using, where/how they acquired their skills in using the Internet and their levels of confidence, are extremely homogenous. Rather than being 'blanket', high-end users of technology, they appear to be discerning and average users of technology when level of use is determined by technology type, length of use and frequency of use. However, no one in the survey group indicated that they had not used the Internet in the previous three months and 91% indicated

they used the Internet often or very frequently.

The theorists are right about the frequency of use for members of this generation. Thirty-nine of the 40 interview participants reported daily use of the Internet, even those who disliked using it. Even though Generation Y use the Internet, not everyone enjoys using technology. Almost 20% of the final survey group reported they strongly disliked or disliked using the Internet for study purposes.

In a three year study conducted at a senior college in Western Australia, a post doctoral fellow investigating how students felt about using online course materials reported that approximately 20% of students did not prefer or enjoy using technology as a vehicle for their learning (Aldridge et al, 2002). These results question the assumption that young people are automatically attracted to learning using the Internet and online materials. However, if tech-savvy means frequent use, then Generation Y are frequent users of technology.

However, if this survey group is representative of Generation Y, they are not ubiquitous or blanket users of technology. Participants are predominantly using email (89%), instant messaging/chat (53%) and library databases (62.288%). Smaller groups are using other technologies such as discussion forums/bulletin boards (25%), web-based lookups eg White Pages (30%), Internet telephony (11%), peer-to-peer file sharing eg Bit Torrent (34%) and social networking/web 2.0 eg MySpace (24.5%). In this survey, the participants did not use a wide range of technologies. As reported in the research literature, they use communication technologies such as email and instant messaging and/or chat. The smaller groups were discrete user groups.

A correlation analysis indicated that the peer-to-peer users were not the same group as those using Internet telephony, both of which require some technical expertise to set up and use. This result suggests that young people are discerning users. They use technology based on satisfying a need rather than the ubiquitous use stated by the Generation Y theorists and the popular media. This result was verified during the interviews, where the participants using social networking tools such as MySpace and FaceBook, had adapted these Web 2.0 technologies and were using them in a very specific way – as an alternative to email and to keep in touch with very specific friendship groups.

Recent reports from the US indicate that young adults change their usage patterns of personal space sites such as MySpace and experience 'Internet burnout' (Lee, 2006). However, these changing patterns of use may reflect a lower actual usage rate than has been reported in the media (current usage versus cumulative use statistics), or a change in behaviour that is a response to changes in lifestyle and new goals ie, they are growing up.

The participants in this group were also using

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specific technologies (hardware) for specific purposes. Almost everyone was using a mobile phone (86%) and interviewees reported that, while they could live without the Internet, they could not live without their mobile phones. This generation are indeed the connected generation. Interestingly, 85% of the survey group also rated printers as major or essential to their lives. When questioned in the interviews, participants said they almost always printed information, maintaining it was easier to read and engage with printed text than with text on screen.

During the tasks, participants exhibited several types of behaviour when trying to locate and interpret information from a screen. They either used the cursor as a line-of-sight guide or peered very closely at the screen. These behaviours and the result from the web survey indicate that this generation do not have good human-computer literacy skills when using the Internet and find it difficult to make meaning from text presented on a screen. This result raises some serious questions about fundamental literacy skills required to locate, interpret and use text presented on a computer screen. If this generation have not acquired these specific literacy skills via familiarity and constant use of technology as posited by the theorists, then they need to be embedded into all areas of the curriculum.

Other results from the web survey indicated that this generation were mainly using hardware such as desktop computers (84.5%), flash/thumb drives/USB sticks (72%), laptop computers (62.5%), digital cameras (50.5%), iPods or portable music players (48.5%) and CD/DVD burners (47.5%). However, during the interviews, participants revealed they only use their mobile phones for texting and phone calls due to cost (everyone was paying for their own mobile), iPods are for music only, digital cameras are for photography (mobile phone cameras are only for spur-of-the-moment photos) and the cost of using the Internet is a factor only if they aren't living at home. These results indicate that they are indeed the connected generation who want and expect instantaneous communication/gratification. Few participants were using online facilities such as online shopping and banking. However, they are discerning users who use technology to satisfy specific needs and they are not afraid to try new technologies and leave old ones behind if they think the newer technology will be better.

Confidence when using technology is also a characteristic of this generation. While males in the survey are more confident than females, the difference in confidence is not statistically significant, an indication that girls are fast closing the gender gap reported in earlier studies. When asked how they acquired their skills, most participants (>87%) indicated they had learnt to use the Internet by experiential learning by themselves. This is the most powerful learning

pedagogy, where the learner constructs his/her own learning which is incremental and built on personal success and gratification. No one appears to be teaching this generation how to use the Internet and electronic resources for information-seeking. Scanlon recently observed that:

those writing about digital natives confuse the ability to navigate around ready-made online environments or download content from the net for a general ease with technology. . . . Far from helping so-called digital natives, we may be creating large numbers of digital refugees: people who are lost when it comes to using technology simply because nobody sat down and showed them how to use technology, or use it effectively (Scanlon, 2009).

A significant percentage of students also reported they had difficulties with simple information literacy skills such as collecting (30.206%), managing (28.705%) and evaluating information (25.202%); finding information again (22%); and even storing information (16.885%) for later use (Combes, 2007b).

A correlation analysis was also conducted using the web survey data to establish any further relationships between how the participants were using technology, their levels of use and levels of confidence. Results from the correlation analysis supported earlier findings from the web survey and indicate that frequency of use and level of confidence have a significant positive impact on how young people feel about their ability to use the Internet successfully, particularly for finding information, communication and entertainment.

Is this a case of familiarity breeds contempt? As software developers create programs that are 'smart' and super user-friendly, where embedded artificial intelligence (AI) processes information in a pre-determined manner, does this lead young people into a false sense of confidence about their ability to find and use information?

High levels of self-efficacy have also been reported in the literature. UK researchers also found that students were reluctant to admit to a lack of knowledge and skill when using the Internet and electronic resources (Banwell & Gannon-Leary, 2000). In this group, 70% of the participants were confident about judging the reliability of the information they found on the Internet, but none of the interviewees planned their information-seeking when searching the Internet and a number admitted they had problems when trying to find information again. Also, very few of the participants successfully completed the tasks in the allotted time frame.

Interviewees indicated that convenience, ease of use, the ability to always/eventually find something, speed and user-friendly search engines, especially Google, attracted them to using the Internet for information-seeking. Major issues included too much information; difficulties

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ascertaining authority, using the wrong keywords and finding relevant information; time wasting and the distracting nature of the online environment.

Students appear to exhibit a strong culture of use, based upon their use of the technology and how they learnt to use it. Hence their information-seeking behaviour is based on simple keyword searches, and few participants use browser facilities to re-find information, relying instead on memory and search engines. The participants trust search engine results, they assume the first sites on a results page are the most relevant and, disturbingly, tend to use the words relevant and authority interchangeably ie. if the result is relevant to my needs then it must be good information because it appears first in a search engine results list. This idea of relevance = authority may also explain why most participants felt that they find what they are looking for most of the time. Many participants indicated that problems only arise when they are searching for very specific information. However, this was not evident during the task analysis.

All participants are using Google almost exclusively and they rarely go beyond the first results page. When asked about their search method only three answers were given:

- "it works for me";
- "guess it's habit";
- "if it ain't broke why fix it?".

Most of the participants were also using Wikipedia, even though they know it is not an authoritative academic resource. One student commented: "Google knows everything" and "Google is king". This anthropomorphisation of a search engine is an extreme example of this trust, where the participant appears to be attributing intelligence to the search engine. Reliance on keyword search methods occurred across all areas in Google/search engines, closed systems/repositories (databases) and on the public domain web (Wikipedia) and indicates a lack of sophistication in search methodology that also limits the quality of information retrieved.

The level of trust and confidence in search engines and the tendency to equate relevance with authority and accuracy indicates that the young people in this group do not really understand how different search engines and databases work. Their Internet literacy skills (knowing where you are in virtual space) were extremely poor and most participants do not appear to know when they were in a closed system (university and library) or out in the public domain. Trust in search engine results and participants' confidence also means that if they can't find anything after trying several searches, they will often assume that the information isn't available electronically, rather than concluding they can't find it.

Participants exhibit two different types of information-seeking behaviour when looking for information. They all exhibit satisficing behaviour

where 'near enough is good enough', and individuals are satisfied with the first piece of information that appears to fulfil their need. They also exhibit 'snaffling' behaviour and click on the first available link either in a search engine results page (public domain), a website page (public domain), a catalogue/index results page (closed public system), or a database results page (closed system).

This behaviour is very fast and indicates that it is a reflexive action. Participants do not have time to read the results abstracts or text on a page. On some occasions they click on a result even when it was obvious from the title that the information is totally irrelevant to their search query. If information they are seeking isn't recognisable in the first page of search results (often the first four), then they will change their keywords, repeatedly revisit the first four results or assume the information is not available online.

Some participants had difficulty finding information in the tasks because they expected to find everything on a single website, while others had great difficulty using the electronic databases to find journal articles and very quickly resorted to Google and the public domain web. They use keyword searches in closed systems such as the university databases (if they are using them), and open systems such as Wikipedia and search engines within websites. Thus participants in this research group transfer their culture of use when searching for information across all electronic resources, even after receiving specific instruction on how to search for information using other techniques either in university preparation courses or in specific first year units.

Most participants were using the Internet before their teenage years, ie. in primary school, while LU and LC users tended to be latecomers to using the Internet. Information-seeking behaviours, as reported by participants and observed during the tasks, are consistent, even for students who indicated they have completed units/sessions in how to use databases and the library at university. Thus young people in this generation appear to

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have developed a culture of use when seeking information using electronic sources, because they are teaching themselves. This culture of use is based on experiential learning and is very difficult to change.

Does this really matter? If educators are going to graduate lifelong learners who are able to adapt to an evolving information landscape and changing technologies; if we are going to produce citizens capable of navigating essential information in a world where everything is online; then yes, these skills are extremely important. Educators must provide young people with an alternative culture of use. Since most of the participants in this survey group acquired their information-seeking skills using the Internet at approximately ten years of age, education intervention must begin early and be included across the primary school curriculum. Since traditional literacy skills are a prerequisite component for information literacy skills building which is an ongoing process, a consistent approach, embedded across the curriculum and occurring throughout all levels of schooling, is required if schools are going to graduate students equipped to be citizens of the future.

Conclusion

Confidence is perhaps the key to understanding how this generation use technology, an aspect the Generation Y theorists observed and postulated about at such length. They misinterpreted confidence and assumed that this also translated into intentional, meaningful and effective information-seeking. Young people are confident, which means they are using the Internet on a daily basis, even those who are less confident. This confidence may be the one fact the theorists got right and it is borne out of familiarity with the technology. The technology is a ubiquitous part of their information landscape and something they have never been without.

Even if they dislike using technology, they still use it and with confidence. This confidence also means they will try new technologies. This attitude towards technology also means they use it in a discerning manner, and pick and choose and adapt technologies to suit their needs at a particular time. Hence, participants report that their usage patterns have changed, as their lifestyle and information needs have changed. This explains why the levels of use in the web survey were quite low, as the metric was based on the Generation Y theory which postulates that this generation use a wide range of technologies. This is not the case. They use technology to be connected more than anything else, and they use it for entertainment. They use it for finding information when the need arises and they have acquired a culture of use when seeking information via electronic means.

While the technology is playing a part in the

development of this culture of use, it is also being driven by the fact that students are being left to learn their information-seeking skills on their own by experimentation. This lack of formal information-seeking skills instruction is due to the fact that educational administrators and teachers believe the myth promulgated by the Generation Y theorists and the popular media. It is assumed that Generation Y (digital natives) already have the skills to locate information using electronic resources, are able to engage with text/information on screen and consequentially can use information they find to meet their needs. The assumption that students have the skills to locate information in the virtual environment simply because they are familiar with technology and confident about using it, has meant that information-seeking behaviour among members of Generation Y is unsophisticated, demonstrates a culture of use that is hard to change and the result of a lack of formal information literacy education. They have poor Internet literacy skills, rely on keyword searching, trust search engine results and as a consequence, exhibit a high level of satisficing and snaffling behaviour.

This generation's lack of understanding of how the web works, coupled with high levels of confidence, means they often fail to realise the limitations of their abilities and assume that if they can't find it on the web, then it doesn't exist. If schools don't take steps to teach this generation of students how to use electronic sources effectively, then our future citizens will be unable to operate in a world where information is the key to educational, social and economic success. The world and technology will continue to move forward and the information landscape will become even more complicated, overloaded and dense, as business and government place everything including service delivery online. Far from being digital natives, Generation Y and those who follow, will in fact be the digital refugees of the future.

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