The search for information and the Net Generation

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Supporters of the Net Generation theory claim that children born after 1985 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. This theory contradicts traditional information theory which contends that information-seeking behaviour is a complex activity that is affected by cultural, educational and social contexts. 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 Net generation theorists. In recent years there has been an emerging body of research on the Net Generation 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. This paper explores the initial findings of research into the information-seeking behaviour of young adults and how they use a range of technologies and electronic resources.

Introduction

Information seeking is an essential part of everyday life. We use a variety and range of information forms and sources to conduct our daily business, interpret information and connect with others successfully in our world (Case 2002). How we search for information to satisfy these daily needs however, has changed and the world of communication and information as presented at the beginning of the twenty-first century has dramatically altered from the picture thirty years ago. We now live in an information landscape that is characterised by multiple formats, text types, graphics, multimedia and instantaneous communication through the Internet and information communications technologies (ICTs). Developments in technology have also created an information landscape that is increasingly complex, dense and overloaded. It is characterised by technological change, access seven days a week and the ability to alter, copy and paste, and disseminate vast quantities of information easily. Young adults who have never known a world without access to instantaneous information appear to have a different culture of information use (Allen, 2003). This paper outlines the initial findings of a research project designed to explore the information-seeking behaviour of young adults (The Net Generation) and whether the culture of use that surrounds the Internet has changed the way they seek information in the electronic environment.

Background – The Net Generation

Who exactly are the Net Generation and what makes them different from previous generations of information seekers? The term Net Generation (children born after 1985) was first coined by early observers of how young people were using the new electronic

environments enabled by Internet and Web technologies. These users are the young adults currently entering our universities and the workplace. Net Generation pundits such as Tapscott, who was writing in the late 1990s when the Internet was just emerging as a widespread and global influence on business, advertising and education (Zakon, 2004), believe that these young adults already have the skills required to use ICTs and electronic resources to seek information. The proponents of the Net Generation theory posit that children born during this time acquire their information-seeking skills because the technology is an everyday part of their information landscape (Tapscott, 1998; Oblinger & Oblinger, 2005). These are the 'digital natives' of the twenty-first century whose use of technology to find information appears to be vastly different from their parents and older generations. Tapscott and his followers claim that members of the Net Generation are socially active, responsible and discerning users of information technologies. The theory also maintains that digital media is fundamentally different from previous communications innovations such as the printing press, radio and television, which are described as passive, inflexible and centralised, hierarchical technologies. In contrast, the new media is characterised by interactivity, connectivity, malleability and distributed in control (Tapscott, 1998).

Net Generation Attributes

Advocates of the Net Generation label maintain that today's young adults have certain characteristics which set them apart from previous generations. Their increased access to information via the Internet and electronic resources gives the Net Generation a greater knowledge base which leads to independence and the ability to question and confront information (Tapscott, 1998). These young adults are preoccupied with free expression and have strong views, a result of being exposed to a lot of information on the Internet (Tapscott, 1998). They know what they want and have greater digital literacy skills (Skiba, 2003; Oblinger & Oblinger, 2005). As a result the Net Generation are thought to be intuitive visual communicators, who have strong visual-spatial skills and are able to readily integrate the virtual with the physical world (Oblinger & Oblinger, 2005). They learn by discovery, investigation and experience which enables them to retain information and use it in innovative ways, and they are comfortable multi-tasking and use a range of technologies to seek information (Skiba, 2003; Dorman, 2000; Oblinger & Oblinger, 2005). Connectivity and social engagement using technologies is very important to this generation of users. Global connectivity allows the Net Generation 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).

While there is no doubt that technology has affected the way we live and influences nearly every aspect of our daily lives, this body of popular literature requires closer analysis to determine whether the characteristics assigned to the Net Generation are based in fact or are merely observations that describe what young people appear to be doing when using ICTs, rather than their actual skill levels and achievements. The significance of this literature cannot be understated. Although the research appears to originate from a small number of specific studies, much of it is freely available on the Internet and has been used by more serious researchers and educationalists seeking innovative ways to cater for a generation of students who expect more from educational systems than the traditional lecture/content-based mode of delivery currently provides. Hence, the members of the Net Generation have been portrayed in the popular media as super users of technology.

As a result, the terms tech-savvy, web-savvy, Internet-savvy and computer-savvy are being used interchangeably to describe young people in major educational policy documents and in the media worldwide. The term tech-savvy is used extensively in the US National Technology Plan Toward a New Golden Age in American Education (U.S. Department of Education/Office of Educational Technology, 2004), and Voices & Views from Today's Tech-Savvy Students, part of a national report sponsored by the non-profit group NetDay (NetDay, 2004; Murray, 2004). The term describes students' technology skill levels and indicates a belief by US system administrators that today's students already have a level of proficiency when seeking and using information found on the Internet and from electronic resources. The Australian Curriculum Corporation's report from the Le@rning Federation also describes the current generation of students as capable users who are able to acquire, communicate and manipulate information, and respond creatively to new technologies (Curriculum Corporation, 2005). Throughout these educational and popular media reports, it is assumed that young people have the necessary skills to locate information easily on the Internet, and are discerning and knowledgeable users who use ICTs to be innovative and creative, inclusive and politically aware. Is this actually the case or are these the observations of an older generation enthralled and perhaps a little bit wary of a younger generation who seem to be able to adopt and adapt a range of emerging technologies effortlessly? Is the Net Generation a 'real' phenomenon, or are we observing a generation of users who are simply used to a different informational landscape?

Recent reports from the US tertiary education sector suggest otherwise. Thwarted Innovation: What happened to elearning and why? (Zemsky, & Massy, 2004), examines elearning initiatives across sixteen universities. Major findings from this study conclude that students do not view or use technology and electronic resources as learning tools. While students want to be connected to each other, they view elearning as a convenience at best and a distraction at its worst. Their primary use for the Internet is for communication and entertainment. In a recent ICT Literacy Assessment from the US Educational Testing Service, researchers found that large numbers of college students did not know how to use refined search strategies, did not have information management skills and few test takers could accurately adapt the information they found (ETS, 2006). These reports from the educational sector present divergent views and raise some interesting questions about the skill levels, attributes and attitudes of the Net Generation when using ICTs and electronic resources for serious information seeking such as an educational context.

Young people and information-seeking in 2000+

In her seminal work on information-seeking behaviour in the mid-1970s, Dervin suggested a number of 'dubious assumptions' that had dominated the research on communication and information seeking for ordinary, everyday needs. These assumptions included the belief that only objective information is valuable, more information is always better, there is relevant information for every need and every information need situation has a solution (Dervin, B. 1976 in Case, 2002). Case suggests that Dervin's assumptions also apply to information-seeking behaviour (ISB) research in more formalised, task-oriented contexts, such as education (Case, 2002). The supporters of the Net Generation theory also appear to make these assumptions about young adults using the Internet and electronic resources to find information. Common information-seeking behaviours described in these earlier studies using traditional formats, also appear in current research dealing with the online environment (Scott, & O'Sullivan, 2005; Livingstone, Bober & Helsper, 2005; Griffiths, 2003). Prevalent

information-seeking behaviours observed amongst young adults of the Net Generation when using the Internet as an information source include being unable to evaluate the authenticity of information (Fallows, 2005, Branch, 2003), variable skill levels in how to use electronic resources effectively and efficiently (Banwell, & Gannon-Leary, 2000), and settling for the first satisfactory solution to information problems ('satisficing'), even though this may not be the best or most appropriate result (Case, 2002; Scott, & O'Sullivan, 2005).

Traditional research has shown that information-seeking behaviour in young adults can be improved by teaching information skills (Oberg, 2001a; Oberg, 2001b; Todd, Kuhlthau & OELMA, 2004) through the use of ISB process models. However, while the issues and some of the behaviours appear to be similar, a small research study conducted with young adults using electronic resources in a task-oriented context, suggests that the intervention strategies required to provide students with online information-seeking skills are different and closely related to students' existing culture of use (Branch, 2003). Findings from recent research conducted as part of the Illinois Mathematics and Science Academy (IMSA) 21st Century Information Fluency Program (21CIF) which used pre-testing and post testing after an intervention skills program in electronic search techniques, found that many students reverted back to using keyword searching and strategies they employed prior to the intervention. This suggests that students come to serious information seeking in the electronic environment with an established culture of use (Barr et al., 2006). This fact requires closer scrutiny by researchers and teacher librarians in schools if we are going to change information seeking behaviour.

Large-scale longitudinal research studies such as the UK Children Go Online (UKCGO) project investigated the use of the Internet by 9-19 year olds (Livingstone & Bober 2004). This ongoing, population study examined a variety of themes including Internet literacy levels and self efficacy, safety and parental intervention, and usage by young people across the United Kingdom. Findings from these studies indicate that while Internet access and use is popular, there are still significant inequalities, especially with home access. While young people use the Internet for a wide range of purposes, many are not socially acceptable. The study concluded that young people in the UK are not critical or discerning users, they have poor Internet literacy skills, invariably trust the information they find on the Internet and rarely question authenticity or authority (Livingstone, Bober & Helsper, 2005). They communicate mostly with their peers and rarely participate in civic, global or political activities online (Livingstone, Bober, & Helsper, 2004). A small percentage of the users surveyed are innovative and create web sites, but a general lack of skills and technical knowledge is a major hindrance to these types of activities (Livingstone, Bober & Helsper, 2004). Self efficacy is an important factor and may affect how young people approach learning new skills. The UK studies 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).

The PEW Internet & American Life Project looked at Americans' use of the Internet and how teens use technology. These studies produced similar findings to the UK studies. While users felt comfortable using search engines and were satisfied with their search results, few users knew much about them or used 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 stopped searching once they felt they had found an answer and had a tendency to rely on single sources of information (Fallows, 2005). The

PEW studies also concluded that teens prefer to spend face-to-face time with their friends and use landline telephones to keep in touch. They do not prefer to communicate with friends or others they don't know using the Internet.

Is this behaviour only applicable to the Net generation or is it a culture of use closely connected to how we use the technology and ICTs? Recent health population studies (UK) using web logs to track information-seeking behaviour, suggest that these behaviours in an electronic environment apply across all age ranges. These population studies concluded that "today's information consumer is a 'flicker' or a 'bouncer' [where] even those who penetrate the sites, rarely go beyond the home page or wander very far" (Nicholas et al., 2003). Usage patterns were remarkably similar across age groups, consumers were unaware of where they were in virtual space and access and speed of delivery appeared to be more important than quality of information (Nicholas et al., 2003; Nicholas, et al. 2004).

Traditional Theories

On the opposite end of the theoretical continuum is the traditional view of information-seeking behaviour, comprising a comprehensive body of research and theory based principally on print resources and traditional repositories such as libraries. This literature suggests that while information seeking is a fundamental method for coping with our environment (Donohew, Tipton & Harvey, 1978, cited in Case, 2002, p. 17), it is a complex activity that is affected by cultural, educational and social contexts. If this basic premise is correct, then the influence and ubiquitous use of technology at every level of society has affected the way we find relevant information and how we use it. It stands to reason that this influence has been particularly profound on the children of the Net Generation who have never known a different information landscape. Case maintains that as a result "our view of information behaviour has become more integrated and less dictated by sources and institutions" (2002, p. 4). He argues that the Web has put all the information in one place, made obscure bits of information easier to find and changed the workplace, education and how we find information (Case, 2002). Does this also mean that a different information context, the Internet, changes the way individuals search for information? Does the information-seeking behaviour of an individual change or are different skills required to find information in this new context? Do the young adults of the Net Generation exhibit unique information-seeking behaviours as advocated by Tapscott and others, or do they use different skills to access information using ICTs and electronic resources?

While the Internet and electronic resources have introduced a new level of complexity to the information landscape, traditional information processing and ISB models (Eisenberg & Berkowitz; 1998; Kuhlthau, 1996) have focused mainly on print materials. The complexity of the online environment, the convergence of technologies (Lepani, 1998) that create new virtual spaces and the widening range of 'new literacy' skills (network/Internet, digital, electronic, computer, ICT literacy) (Combes, 2005b) required to access information in the online environment do not appear to be included in the current ISB models. Instead, these models are often interpreted as linear and process oriented (Foster, 2005) where information seeking as a set of identifiable skills has been taken out of context and taught separately to students. While the models identify information-seeking behaviour as a process that includes problem-solving, interpreting and analysing information, they do not appear to specifically address the complexities of the online environment and the decision-making and interpretive skills required to deal with increasingly multifaceted data, information overload and a range

of delivery modes and formats. More recent studies of information process models attempt to align the information-seeking process with the interactive nature of the Web (Foster, 2005) and suggest a non-linear model is more appropriate for the electronic environment. While this research attempts to marry the (interpreted) linearity of the traditional ISB models with the interactive, malleable and distributed nature of the Web as observed by Tapscott, it fails to critically re-assess common assumptions about the information-seeking behaviour of young people in this new environment, the culture of use they bring with them when seriously searching for information and how this affects their information seeking behaviour in the electronic environment.

This research project posits that there is a gap between these two theories, neither of which satisfactorily explains how young adults are using the Internet and electronic resources to satisfy their information needs. While the Net Generation theory relies on superficial observations and popular terms to describe how young people are using the Internet and electronic resources, the traditional ISB theories and models don't appear to take into account the complexities introduced by the online environment or the effects on information-seeking behaviour of the existing culture of use that surrounds the Internet. The overarching premise of this study centres on the belief that a greater understanding of how young adults seek information and interact with information and the online environment, is an important first step in developing strategies to prepare them for tertiary education, the workplace and life in a world that has been transformed by technology.

Method

To find out how young people are currently using the Internet, ICTs and electronic resources for information seeking, the data collection for this research has been divided into two phases. During the first phase, students between the ages of seventeen and twenty-two were invited to participate in an anonymous Web survey. Questions in the survey included demographic data and students' use of the Internet for study and recreational purposes before entering university. Questions were also asked about:

- the types of software and hardware used by young people;
- how important information communications technologies (ICTs) are in their daily lives;
- where/from whom they acquired their online skills
- how they feel about their skill levels (self-perception and self-esteem); and
- what they principally use technology for – information gathering, communication, entertainment, as an organisational tool.

While this initial data set was designed to provide some general information from the sample group, its main function is to provide a filtering mechanism to target participants for follow-up task analysis and in-depth interviews. The participants will be filtered by the survey instrument and classified into four (4) categories according to their index of 'Net Gen-ness':

1. **LCLNG:** Low Confidence, Low Net Gen Attributes
2. **LCHNG:** Low Confidence, High Net Gen Attributes
3. **HCLNG:** High Confidence, Low Net Gen Attributes
4. **HCHNG:** High Confidence, High Net Gen Attributes

In the second phase of the research, the selected participants will be asked to complete two real life, information tasks. One task will reflect personal information seeking behaviour and one, serious (educational context) information seeking behaviour. These tasks will be followed by structured in-depth interviews. Data collected during the empirical study (Web survey), the task analysis and the in-depth interviews will then be analysed and compared with findings reported in the academic research literature, population studies conducted by universities and organisations, and the new 'info culture' of young adult Internet users being described in the media and popular literature. Analysis of this data will provide information about any emerging trends in the information-seeking behaviour of young adult Internet users and how much their information-seeking behaviour is affected by a changing culture of use in the electronic environment.

The Web survey

The initial Web survey was conducted early in the university calendar in March 2007, before census date. The timing was designed to catch students before the early withdrawal date (end of March), thus reducing the likelihood of only reaching students who stayed on at university. By using the students at university as a representative sample of the Net Generation, the survey is already accessing a specific group within the Net Generation population. Thus, it could be argued that this group are more likely to be tech savvy and high-end users of technology due to their higher levels of education. Hence, the two universities chosen for the survey fall in the middle to low end of the university market and traditionally cater for students from a wide range of socioeconomic backgrounds, have lower entry levels and large numbers of overseas students. While still a specific group, students at these universities are more likely to be representative of the overall young adult population in this age group.

While the survey initially sought to target first year students, gaining access to this specific group proved to be problematic. Both universities were reluctant to provide access to their students and would only allow a single invitation to participate to be circulated. At one university the invitation to participate was available on the electronic student notice board. While the notice was available for the duration of the survey (three weeks), no follow up message indicating that the survey was due to close was allowed. At the second university, one invitation email was sent to all first year students and the invitation posted on the BlackBoard (Learning Management System) student notice board. Since BlackBoard is not used by all students at the university, the message only reached a proportion of students. No follow up email message was permitted. In both cases the invitation to participate was limited to two sentences. The first sentence included a brief statement of what the research was about. Since the invitation to participate was restricted, students were asked to participate in the form of a challenge. Thus the second sentence of the invitation read as follows:

'Please HAVE YOUR SAY and tell us how you use technology by answering an anonymous, 10 minute web survey.

When students clicked on the link to the survey, they received a full disclosure statement about the research including the purpose and scope, the follow up research and contact information.

Preliminary Findings

The survey group

Despite these restrictions, over one thousand students completed the survey. After students were eliminated due to age, Null responses and double up responses, five hundred and thirty-seven (537) students remained in the final survey group. Of these students, two hundred and thirty two (232) or 43% of the final survey group indicated a willingness to be part of the follow up research. This percentage was particularly high with several students sending unsolicited emails to the researcher asking to be included and adding extra commentary. The high response rate from students to the initial invitation even though access was limited, plus the high number of students willing to participate in the follow up research, perhaps indicates that technology and how young people use technology is an issue for them. It may also be due to a belief that older people who are essentially the providers (especially in the case of university students) would benefit from their input.

Demographic data

Students were asked several questions relating to age, how they were studying at university, number of years at university, whether they were part time or fulltime and if they had used a Web survey before. Over a third of the students (37%) of the final survey group recorded an age of less than eighteen years, a following 44% were aged between eighteen and twenty-one, while 20% were in the oldest age bracket, twenty-two. Surprisingly, no one in the whole survey group recorded an age of eighteen years. This may have been due to confusion as participants were offered a choice of eighteen or less than eighteen years. Nevertheless, the final survey group does contain a good spread of the representative age groups at the upper end of the Net Generation demographic.

Two hundred and forty students (45%) of the final survey group indicated they were in their first year at university, with a following 25% in second year. Five hundred students (93%) were studying fulltime, four hundred and eighty-two (89.75%) studied all their units on campus and only one hundred and thirty (24%) indicated they studied some units on campus and some online. Three hundred and one students (56%) had been using the Internet for seven years or longer, with only 32 (6%) using the Internet for three or less years. So the survey group consisted was made up of mainly long-term, experienced users. Surprisingly, eighty-seven students (16%) also reported they had never used a Web survey before.

The above data indicates that while students may be using technology, they are certainly not using it to access the majority of their course materials at university level. Nor were they using online materials prior to entering university, since 28% reported they had never used online course materials and 41.5% indicated they were a minor part of their previous study experience. These results are supported in the research literature, which tells us that education, particularly at the primary and secondary levels, has not incorporated the widespread use of technology as a delivery mode for curriculum materials (Combes, 2005a), while elearning initiatives at tertiary level, have not been very successful (Zemsky & Massy, 2004).

Self efficacy and levels of use

A number of questions at the beginning of the survey looked at how students rated their overall skill levels using the Internet, how many hours per week they used the Internet for study and recreational purposes and how long they have been using the Internet. This data is summarised in Table 1 below.

Self efficacy: personal rating	Non user 40 7.5%	Beginner 96 18%	Average 200 37%	Good 150 28%	Expert 51 9.5%
Frequency of use: Internet	Never 0	Occasionally 22 4%	Sometimes 27 5%	Often 103 19%	V.Frequently 385 72%
Internet use, study: weekly	<1-1hour 49 9%	2–7 hours 278 52%	8-15 hours 147 27.5%	16-25 hours 45 8.5%	25+ hours 18 3%
Internet use, personal: weekly	<1-1hour 53 10%	2–7 hours 171 32%	8-15 hours 137 25%	16-25 hours 63 12%	25+ hours 113 21%
Length of Internet use	<1-1year 11 2%	2-3 years 21 4%	4-6 years 204 38%	7-9 years 211 39%	>10 years 90 17%

Table 1: Self efficacy and levels of Internet use

According to this data set, students in the final survey group felt good about their ability to use the Internet, with 74.5% of respondents rating their skills as average and above. A small group (7.5%) rated themselves as non-users, with a further 18% claiming beginner status, even though all students claimed to have used the Internet in the preceding three months at least occasionally. These high levels of self efficacy have also been reported in the literature, with UK researchers finding that students were reluctant to admit to a lack of knowledge and skill when using the Internet and electronic resources (Banwell, & Gannon-Leary, 2000). The number of students claiming to be non-users or beginners is also consistent with results later in the survey where students were asked to rate their preference for using the Internet for study. In this question 19.5% of the final survey group reported that they strongly disliked or disliked using the Internet for study purposes. In a three 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 twenty percent 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. In the senior college study, students were also adamant that the online curriculum could not replace the teacher as the key facilitator for their learning (Aldridge et al, 2002)

Students were also asked to rate their confidence when using the Internet for study purposes and their ability to use information they had found online. These results are summarised in Table 2 below.

Confidence	Not/Gaining	Very confident
Using the Internet for study	64 (12%)	268 (50%)
Using the Internet to find information	59 (11%)	273 (51%)
In ability to find information	52 (9.5%)	291 (54%)
In ability to evaluate information	160 (30%)	131 (24%)
In ability to collect information I have found for later use	129 (23.5%)	163 (30.5%)
In ability to organise information I have found for later use	166 (31%)	154 (28.5%)
In ability to store information I have found for later use	91 (17%)	217 (40.5%)
In ability to find information I have found for later use	120 (22%)	194 (36%)

Table 2: Confidence using the Internet

This data set produced some interesting results. While confidence levels amongst the respondents were very high for using the Internet for study and finding information, there were still 10 - 12% of students who were not confident or gaining confidence. When asked to rate their ability to find information using the Internet, students' confidence levels were even higher, with 54% rating themselves as very confident. However, these levels drop when students are asked to rate their ability to perform simple information literacy tasks such as collecting (30.5%), evaluating (25%) and organising information (28.5%) they have found on the Internet. Ninety-one students (17%) were also not confident or gaining confidence in the simple task of storing information they had found, while 22% reported difficulties in finding this information again for later use. These results suggest that students may not be as 'tech-savvy' as posited by the Net Generation theorists. Students' information seeking skills will be further examined during the second phase of the research.

Another series of questions asked students where or from whom they had acquired their Internet skills. This data is summarised in table 3 below.

Skills acquisition: Internet	Not apply	No/minor help	Major/essential
Mother/female guardian	97 (18%)	381 (71%)	59 (11%)
Father/male guardian	107 (20%)	331(61.5%)	99 (18.5%)
Sister	241 (45%)	267 (49.5%)	29 (5.5%)
Brother	226 (42%)	242 (45%)	69 (13%)
Friends	61 (11%)	286 (53.5%)	190 (35.5%)
Teachers at school	87 (16%)	337 (63%)	113 (21%)
School librarian	143 (26.5%)	351 (65.5%)	43 (8%)
Computer teacher at school	150 (28%)	256 (47.5%)	131 (24.5%)
Experimented by myself	19 (3.5%)	46 (8.5%)	472 (88%)
Learned myself by reading books/magazines	193 (36%)	226 (42%)	118 (22%)

Table 3: People who have helped you to acquire the skills to use the Internet

This data set overwhelmingly supports the notion that students acquire their Internet skills by experimentation (88%). A further 22% reported gaining skills by using print information (books and magazines) and 35.5% gained their skills from friends. A few students reported acquiring their skills from teachers (21-24.5%). Very few students cited the school librarian as a key person in their skills acquisition (8%). This data further supports the notion that students from the Net Generation arrive at school with an established culture of use that is not based on established information skills theory. The poor showing by school librarians and teachers also indicates that there is much work still to be done on integrating information literacy skills in the curriculum.

The last data set in the survey examined students' use of a range of technologies and utility software. According to the Net Generation theorists, young people use a wide range of technologies and participate in a variety of activities online that lead to social transformation (Tapscott, 1998). In this survey the participants did not use a wide range of technologies. Instead they use communication technologies such as email (89%), instant messaging and/or chat (53%) and mobile phones (86%). They were not using newer technologies such as Internet telephony (11%), peer-to-peer file sharing such as BitTorrent (34.5%), web-based lookups such as the White Pages (30%) or diarising sites such as MySpace (24.5%) or Weblogs (8.5%). 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). The results in this survey may be a result of these changing patterns of use or they may reflect a lower actual usage rate than has been reported in the media. Students in this survey also reported using library databases (62%), computers (18%) and more traditional technology such as printers (85%), an indication perhaps that students still print their learning materials. However, only 63% of the group are mobile and use laptops. While they use storage devices such as USB thumb sticks (72%), they do not use organising devices such as PDAs (7%).

Conclusions

The data reported here represents the preliminary findings of a much larger research project. However, it does raise some interesting points that challenge the idea of a Net Generation of techno savvy, super users coming into university. While the students are very confident in their ability to use technology to find information, they are less confident in their ability to manipulate/use the information they have found. They are also discerning users and tend to rely on technology for communication rather than using a range of technologies for a variety of activities. They also prefer to use more traditional technologies associated with the production of print media such as computers, laptops and printers. Certainly the students in this representative sample group do not demonstrate all of the attributes associated with the Net Generation. However, their patterns of use and levels of self efficacy do reflect the findings of other research studies on how young people actually use technology in their everyday lives. A major concern for educationalists and particularly school librarians is the fact that the students in this survey group acquired their information technology skills by experimentation or from friends and not via information skills teaching. This fact indicates that students already have a culture of use which may affect their capacity to improve their information seeking behaviour as a result of information literacy instruction.

While the second phase of this research will provide more detailed data about students' information seeking behaviour and culture of use, this first phase certainly indicates that educationalists and policy makers should not make assumptions about young people and

their use of technology. Before we label young people as tech savvy, we need to understand their current culture of use and how this influences information-seeking behaviour in the online environment. There is no question that the information landscape of the twenty-first century is vastly different or that young people today inhabit a world where a range of convergent, digital technologies are a transparent part of this landscape. This research is part of an emerging body of discourse that explores how young people are seeking information in this brave new world, to ensure they do have the skills to be truly smart information users.

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