Digital Refugees? How Students in Thailand and Australia Seek and Use Information Online

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Abstract - **New generations of young people are still being touted as digital natives in a world where mobile technology is increasingly available worldwide. Technology, particularly mobile phones, serve as communication and information-seeking devices connected to the Internet. Technology appears in all levels of society from the rice field, the market place, the grocery store self-serve, online banking and shopping and school classrooms. These technologies are changing the way we communicate and socialise, and alter traditional ways of conducting business and making and maintaining social and family connections. How we use technology affects the development of new technologies, and vice versa, as new technology affects how we use it. This paper compares the interview findings of a much larger study conducted in a Thai university and an older dataset (2008) conducted across two Australian universities to determine whether the way young people use technology has changed during the last eight years. In both studies how students in their early years at university used technology and felt about technology were examined. Findings from the current research indicate that attitudes to technology and cultures of technology use amongst young people have changed little since the original study's data collection eight years ago.**

Keywords - **Online Learning, Cultures of Technology Use, Digital Natives, Cross-Cultural**

I. INTRODUCTION

Our world today is characterized by change across all areas of society and this change is mainly due to developments in the field of Information Technology, which has meant that large numbers of people around the world have instant access to up-to-date information and communication via social media and the World Wide Web (WWW). This change in how society operates was so rapid and profound that by the end of the 1990s, social commentators began referring to society as wired and part of a new age, the Information Age [1] as distinct from the Industrial Age. Early observers of how young people in particular were using the Internet/WWW led to a new language to describe their activities. Terms such as information super highway, tech-savvy, Net Generation, Generation Y, Millennials, digital natives and digital immigrants were typical of this era (1990 – 2000). These terms still have resonance today [2]. Later terms to describe this change that is ongoing include 21st Century learning, global village, digital literacy, digital fluency and Next Generation Users (NGUs, someone who uses at least two different applications on their mobile device or who owns more than two devices) [3]. These terms represent an attempt to describe how technology has changed and continues to change, the way we communicate, seek and use information. They represent a way of describing how individuals in society have changed how they communicate, learn and conduct business, personal and family

matters.

II. LITERATURE REVIEW

A major question for both studies being compared in this paper is whether these changes represent superficial use of technology or an in-depth understanding of how technology can be used for information-seeking and the use and re-purposing of good/authentic, up-to-date information to meet individual needs. Both studies used a survey followed by interviews with students at higher education level, in order to find out how students/young people felt about ICT ownership, their use of technology and preferences especially when studying wholly online [2, 4-6]. It was anticipated that the answers to these questions would be useful to administrators, course coordinators and lecturers in tailoring resources to student preferences, and thus deliver greater student engagement and satisfaction. The results of the earlier study also considered how young people find and use information to meet their needs [5]. Both studies sought to find out how young people learn about information-seeking when using technology and what this means for future generations.

The adoption and impact of technology on teaching practice and student learning has been studied worldwide as policy makers, educators and governments seek to cut costs in the delivery of education and the resources needed to engage youth, who in many cases are disaffected. There are many schools, universities and training organisations around the world that leverage the benefits of information communication technologies (ICTs) in the classroom. Using technology as a delivery mode in educational environments allows for the flexible delivery of courses, and satisfies what many educators and policy makers insist is an imperative that education must have current technologies in teaching-learning spaces, because technology is now a ubiquitous element of how society operates [7; 8]. As we move towards the third decade of the twenty-first century, technology allows people to communicate easily one-to-one or one-to-many, and individuals can conduct their personal and professional lives wholly online. Students can also complete educational programs wholly online or via blended learning programs (face-to-face and online). The skills, attitudes and beliefs about technology use that students bring with them to the classroom will directly affect how well they and their teachers manage learning in this new environment.

III. RESEARCH METHODOLOGY

Both research studies used a survey to ask students about their technology use, how they first learnt to use technology and how they felt about the technology they used. The results and comparison between the Australian and the Thai survey results have been accepted for publication in the Walailak Journal of Science and Technology, publication due in October 2017 [6]. Semi-structured interviews were designed to examine in more detail how volunteers from the original survey used the Internet and electronic resources, and provided valuable information about their perceived skill levels. The research literature supports semi-structured interviews as a useful technique for collecting in-depth data from individual participants, as it forms a framework where the interviewees can articulate and reflect upon their experiences [9-10]. In-depth, semi-structured interviewing is primarily an ‘interpretive process’. It is a research method which accommodates how people interpret the world around them and assign meaning to events, issues and experiences [11].

The quality of the information elicited from participants in an interview depends on the skill of the interviewer [12-13]. A semi-structured interview format and an interview prompt checklist were used in both studies to provide consistency and to act as a quality assurance measure to balance the influence of the interviewer as a novice [12, 14]. The structured interview format and prompt checklist were used to “cultivate the participant’s narrative activity” [9, 15] and counteract the interviewer’s lack of experience and training

in interview techniques, both of which may influence the quality of data collected using this technique [12]. Using a checklist provides consistency and focus for the interviewer, adds rigor and integrity to the interview method and final data collection, and has been identified as "a means of facilitating interview technique and skill for the novice" [16].

Both studies used similar questions in the interview checklist and prompts which provided a template for the reporting structure used to analyse the interview findings. These tools also assisted in keeping the time allocation (half an hour) consistent for the interviews, and kept to a minimum the influence of individual participants who were more dominant and prone to provide more extensive answers/conversation. Questions were designed to obtain a more detailed picture of how young people use the Internet and technology in their daily lives and for seeking information, primarily when studying.

Responses from the interview questions provided a wealth of qualitative data which were transcribed and coded thematically using both the interview question checklist and probes as a guide to identify and record participant responses, so patterns of use and common perceptions were evident [17-18]. Hermeneutic analysis was used to provide an iterative, analytical approach [19] to establish the relationship between understanding the text as a whole and the interpretation of its parts. The interview questions were designed to encourage participants to reflect on their use of technology. The inclusion of reflective practice in the interviews was designed to act as a counter balance to reports in the literature that students in other studies have been very reticent about admitting a lack of skill in their use of the Internet and technology [20-21].

IV. PARTICIPANTS

Follow-up interviews were conducted in both studies and included 40 students (20 males and 20 females) in the Australian study and 39 students (11 males and 28 females) in the Thai study. Of the participants in the Thai study, 50% were in first year at university, 37% in second year and the rest were in their third year. They were studying in 3 major courses including the Faculty of Liberal Arts Education, Media and Communications (7.79%), the Faculty of Management and Information Technology (75%) and the Faculty of Education (17.95%). Seventy-two percent of the participants were aged between 18-22 years. Students interviewed in the Australian study were studying across a diverse range of courses including Biology, Business, Chemical Engineering, Computer Science, Creative Industries, Economics, Education, Fine Arts, Journalism, Medicine, Molecular Genetics, Psychology and Sports Science. Participants ranged from first year students through to fourth year honors and represented a range of cultural and ethnic groups; included both local and international students; students living independently and students still living at home; and who came from a range of socioeconomic backgrounds. Similar to the Thai study all participants were aged between 18 and 22 years.

V. RESULTS

In the Thai study students were asked to describe themselves as an Internet user and to provide details about their use and attitudes to technology for information-seeking. The results of are in a series of tables below. Comparison with the Australian study findings follow each table which reports on the results of the Thai research.

TABLE I
DESCRIBING MYSELF AS AN INTERNET USER

Question	Responses			
How often do you use the internet?	Very often	39 students (100%)		
Probe: please clarify.	Every day	All the time	All night	All my free time
Number of students	34	8	9	11
Probe: What do you use it primarily for?	Youtube	Twister/Line	Social media	
Number of students	2	4	33	
Probe: What other things do you use technology for?	Job searches	News	Line (chat)	Music downloads
Number of students	1	3	9	13
	Games	Youtube	Search information	Facebook
Number of students	6	5	9	4
	Study			
Number of students	15			

Both sexes are ported similar results, with students saying they used the internet on an everyday basis. Eight years previously, students in the Australian study reported similar findings. Most were using the internet on a daily basis, excluding their use at university. This study also revealed that they were using a limited range of technologies [5]. Of course in 2016, the number of technologies available have increased significantly as developments in technology have meant that young people have greater connectivity, mobility and access to the internet. In 2008 Google was in the early days of its dominance as a search engine, early social media platforms such as My Space, blogs and wikis were just beginning to make their mark. Facebook did not set up its international quarters until 2008, Twitter was only just on the horizon, the first iphone had just been released, there was no such thing as a smart phone and apps were a part of the future, as were Web-based utilities such as Instagram, snapchat, and Facebook live.

TABLE II
INTERNET USE

Question	Responses			
What technologies do you use to access the Internet?	Laptop	Mobile Phone	Desktop	
Number of students	10	23	6	
Probe: Why do you use a particular device?	Multitasking easier	Prefer to use keyboard	Prefer large screen	Convenient & comfortable
Number of students	6	5	6	28
Probe: What are the advantages of using your preferred device?	Multitasking easier	Small size	Large screen	Use for study
Number of students	4	25	8	2
	Do many things	Easy & quick		
Number of students	3	4		
Probe: What are the disadvantages of using your preferred device?	Lacks mobility	Small screen	Low battery life	Hard to type
Number of students	1	5	3	13
	Too large	Expensive	Time consuming	
Number of students	6	6	5	

Similar to the Australian study, students in the Thai study were using laptop and desktop computers, as well as their mobile phones to access the Internet. Cost was also a factor for Thai students with just over half using their mobiles for access. This was also true for the Australian students, for whom cost was a major factor in how they used their mobile phones. In the earlier research all participants reported using their mobile phones mainly for calls and text, only one student used it for email, three used it for music and eight out of the forty sometimes used the camera. It would seem that cost is a factor for participants in both studies, and students often don't have access to the most up-to-date technology [6]. The results from the Thai study also indicate that while some students view mobility and the small size of the device they use to access the Internet as advantages, others prefer to work with a larger screen and keyboard. The idea of being able to multitask was also evident in both studies, although how participants understood multitasking in the Australian study indicated that they were actually task switching rather than multitasking.

TABLE III
USE OF THE PRINTER

Question	Responses			
What other technologies do you use regularly?	Printer	39 students		
Probe: What do you use the printer for?	Homework	Assignment submission	Print Photos	
Number of students	34	38	4	
Probe: Is this technology important?	Yes	39 students		
Number of students	34	38	4	
Probe: Can you live without it?	No	Yes	Not really	
Number of students	18	15	6	

A surprise finding in the Australian interviews was students' reliance on the printer where 65% of the forty participants were printing information they found on the Internet most of the time. When asked why they printed so much, 72.5% (29) said they preferred hard copy because it was easier to read and/or easier to understand (comprehend) information. Five participants said they had to provide assignments in hard copy, and six males mentioned the convenience of having a hard copy which they felt was more mobile. In the Thai study thirty eight of the thirty nine participants were printing assignments, an indication that universities still haven't moved to electronic submission and marking of assignments. In both studies students were also printing articles and tasks. In the Australian study this was explored further using task analysis where participants were videoed and their voice protocols and use of the computer recorded. Findings indicated that we read the screen differently to a print resource, a finding that is currently being explored using eye tracker software [22].

TABLE IV
LEARNING TO USE THE INTERNET

Question	Responses			
Who taught you to use the Internet?	Myself	39 students		
Probe: Do you find it easy to find information online?	Yes	Not all the time		
Number of students	36	2		

Probe: Do you always find what you are looking for?	Yes	Sometimes		
Number of students	10	29		
Probe: What do you find difficult about using the Internet to find information?	Not difficult	Not enough information	Incorrect information	Difficult topic
Number of students	11	5	30	11
Probe: How would you rate your ability to use the information you find?	Average	Good	Very good	
Number of students	3	14	22	

As with the Australian study, participants in the Thai research were very confident about their ability to use the Internet to find information, but not as confident about their ability to use and re-purpose information (information literacy). Similar to findings in the Australian study, more than half the Thai participants said they often could not find what they were looking for, with specificity and incorrect information being reported as problematic. However, in both studies, participants rated their ability to find information using the Internet as average through to very good. In both studies no one rated themselves as beginners or experts. It is also interesting that the initial question concerning Internet skills acquisition was also the same in both studies. All of the Thais students said they taught themselves to use the Internet, as did all but one of the Australian students who learnt his skills from friends. These results indicate that students are not taught how to use the Internet and as a consequence tend to use it superficially, ineffectively and inefficiently, and often unethically as a result [5].

TABLE V
SEARCH BEHAVIOR

Question	**Responses**			
How do you find information for study?	Wikipedia	Google	Library	
Number of students	1	36	2	
Probe: Describe how often you use the library?	Every day	1-2 times/week	Only when teacher asks	Sometimes
Number of students	1	8	11	3
	Rarely			
Number of students	16			
Probe: Do you find it easy to use the library?	No	Yes	Fewer books	
Number of students	8	28	7	

As with the Australian research, the Thai students were using Google exclusively to find information online for study purposes. Only a few were using the library, although most said the library was easy to use. This section of the interviews in the Thai study required more probing. In the Australian study 40% of the participants were using Wikipedia as a major information resource. No one understood what a Boolean search method entailed, and 40% thought that if a site appeared relevant to their topic then it must be authoritative information. Similar to the Thai study, only two students in the Australian study were using the library regularly.

TABLE VI
INFORMATION-SEEKING ONLINE

Question	Responses			
What types of information do you use the Internet for?	Emergency	Searching	GPS	Gaming
Number of students	3	2	4	7
	Photo galleries	Music	Studying	Chat with friends
Number of students	12	26	7	14
	Contact family	Social media	Entertainment	YouTube
Number of students	28	8	5	13
Probe: Could you live without the Internet?	Yes but difficult	Yes	Perhaps	No part of my life
Number of students	2	19	1	5
	No			
Number of students	11			

Students in both studies were using the Internet for gaming, downloading music, entertainment, and connecting with friends and family. In the Thai research half of the respondents reported that they could live without the Internet, while 62% of the Australian students said similar. Throughout both the Thai and the Australian research there were no significant differences between answers from males and females.

VI. CONCLUSIONS

A major finding when the survey and interview data from the two studies are compared (remembering that they were conducted eight years apart) are the similarities evident in the results [6]. It would appear that students in both countries are using technology in a similar fashion. Despite differences in culture, the education system and the timeframe between the two studies, participants all reported teaching themselves to use the Internet. This finding means that young people are still entering schools and universities with a culture of technology use that is predicated on exploration and personal success, and simple search methods using almost exclusively, a single search engine, Google. Findings in the Thai study confirm earlier results that support 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 [23].

Similarities also appear in how students in both studies were finding information, their difficulties in finding information and how little the library featured in their lives at university. This result is worrying because universities invest a lot of money in their libraries and a university is the training ground for future research, of which the library is an important component. In both studies however, it was evident in the interviews that students didn't always know where they were in virtual space, and as a consequence may not have realized that they were actually using the Internet to access the library and/or their course materials. This idea of whether young people actually have a sense of where they are in virtual space requires more investigation.

Both the Thai and Australian studies found that technology is especially important to young people for staying connected to friends and family. Entertainment, social media, YouTube, downloading music and gaming were important activities, while other uses included banking, online shopping and news gathering [6]. These other uses were at similar levels in both studies and may be influenced by the fact that secure online banking and shopping in Thailand are still being developed, although the use of social media to market goods is increasing.

VII. ACKNOWLEDGMENT

The researchers would like to thanks the Faculty of Management, Nakhon Phanom University, and Special thanks to the School of Computer and Security Science, Edith Cowan University, Australia, who supports the tools and location for the research.

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(Arranged in the order of citation in the same fashion as the case of Footnotes.)

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