UNDERSTANDING INDIGENOUS PEOPLE'S INFORMATION PRACTICES AND INTERNET USE: A NGARRINDJERI PERSPECTIVE

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Abstract

Little is known about indigenous people's interactions with the Internet as well as their attitudes, values, and skills in using the Internet and information and communication technologies to retain their knowledge. We present the preliminary results of the research undertaken with Ngarrindjeri people living from the Lower Murray River Lakes and the Coorong areas in South Australia, and then review the implications of these findings for designing interventions. Twenty-one Ngarrindjeri volunteers participated in the questionnaires, interviews and field observation. The results show that, following family members, the Internet was considered to be the second most important source for obtaining various sorts of information. Though having types of hesitation and cultural cautions, the indigenous participants embraced the Internet and online resources with great enthusiasm. The findings suggest that it is critical to adapt Internet technology to incorporate indigenous cultures including their information and social practices when we design and deliver information products and services for indigenous people.

Keywords: Indigenous knowledge, Indigenous people, Information practice, Internet use.

1   INTRODUCTION

Indigenous knowledge is embedded in indigenous culture and intertwined with traditional stories (Bell 2008; Hunter 2006). Many of these values and traditions are identified as knowledge deep-rooted with ideas and customs that are part of indigenous people's way of life (Hunter 2006; Meyer 2009; Yeh 2007). Therefore, indigenous people's information practices must be understood within their cultural contexts and traditional knowledge. The information practice approach assumes that "the processes of information seeking and use are constituted socially and dialogically, rather than based on the ideas and motives of individual actors" (Tuominen et al. 2005). As such, our attention is directed to indigenous people as members of a community that constitutes the cultural context of their everyday information activities. Surfing on the Internet is viewed to be a ubiquitous way of accessing, sourcing, and sharing a variety of information online. Yet little is known about to what extent and the ways in which indigenous people engage with the Internet in their everyday information practices. Little is known either about their attitudes, values, and skills in the use of the Internet and related technologies to retain as well as distribute their knowledge to others.

This study is among the first to investigate information practices and Internet use by Ngarrindjeri people who live in the Lower Murray River Lakes and the Coorong areas in South Australia. The research questions to be addressed include: (1) how do Ngarrindjeri people use and view the Internet in their information accessing, social practices and cultural transmission? (2) What are the barriers and concerns that may limit them in taking advantage of the Internet? And (3) what opportunities are available for improving the indigenous community's interactions with information and communication technologies (ICTs)? The findings would be useful to establish evidence-based actions and decisions, for example, a framework of best practices in integration of Internet technology, applications, and services to support the development and well-being of indigenous communities in an appropriate and sustainable way. This paper reports the preliminary results of the research project. The interpretations, opinions, views, concerns, and findings contained in this paper are the analytical results of collected data during our field research.

2   LITERATURE REVIEW

Culture is believed to be an influential factor affecting information practices of indigenous people; for example, passing knowledge to suitable persons over time (Meyer 2009; Yeh 2007) and traditional knowledge is phrased by repetitions and exchanged via face-to-face communications and by word of mouth (Dyson 2004). Oral communications are based on traditional stories and beliefs that are passed on through storytelling, ceremony, art and craft gathering and hunting (Bell 2008). There have been increasing academic interests around the world on the study of the interactions between indigenous people, their culture, the Internet, and ICT adoption over the past decades (Bidwell et al. 2010; Radoll 2009).

For instance, Dyson (2004) claimed that the Internet is amplified with text, graphics, audio, and video files, which suits well with indigenous people's strengths in art, music and oral forms of communication. Moreover, Dyson and Underwood (2006) reported the content of indigenous websites established by indigenous people and the services they accessed via the Web. The increasing use of the Internet communications such as Facebook and online chatting by indigenous people has the potential for impacting on their lives (Iseke-Barners 2002). The uses of mobile devices (e.g. mobile phones and Tablets) and mobile Internet are popular in indigenous communities because this echoes on indigenous oral communication structure. In addition, connecting to mobile Internet creates an alternative dimension of social practices where spaces and distances are no longer an issue for indigenous people (Brady, Dyson, & Asela 2008). Indigenous information practices are embedded in cultural and social practices associated with their life experiences (Yeh 2007). There is, however, lacking of an empirical study to investigate in detail information practices and online activities of indigenous people.

Hunter (2006) referred to indigenous knowledge as traditional or local knowledge that encompasses the large body of accumulative knowledge and skills, which have been passed on by generations of Elders. However, it is sad to know that, as per the conversations with Elders during our field work, in the Ngarrindjeri community only a few Elders hold incredible knowledge and so many of them had passed away without reaching their 60s and some passing so suddenly that the knowledge they possess went with them; many stories and practical knowledge are being lost. Hence, there is an urgent need to transfer the wealth of indigenous knowledge possessed by Elders to the younger generations so that its culture and knowledge can be retained and prosper (Slade and Yoong 2014). Some researchers suggest making use of the Internet and ICTs to store and disseminate explicit indigenous knowledge that can be recorded in paper or electronic form and shared with a broad community, thereby, helping indigenous knowledge survive and thrive. For example, van der Velden (2013) proposed a reflective design exercise for Wikipedia as a potential digital repository of explicit indigenous knowledge.

Winschiers-Theophilus and Bidwell (2013) recognised the fundamental differences that must be "elaborated, framed, and validated from an indigenous point of view" (p. 253) when designing online programs or developing human-computer interaction paradigms for indigenous people. Research suggests that an individual behaviour affects group behaviour within indigenous communities, for instance, when an individual transmits community issues over the Web and these are out of context/control; this is an on-going concern by the community (Du et al. 2014). Such experience may create disinclination towards the benefits of the Internet for indigenous communities. However, little is known about the attitudes and views of indigenous people with regard to the role of the Internet in supporting their everyday information and social practices as well as cultural transmission. Research undertaken in this project aims to provide a better understanding of the Ngarrindjeri's information practices and their perspectives on ICTs, which can contribute to the design of user-centric indigenous information systems and intervention programs.

3 RESEARCH METHODOLOGY

Culturally appropriate ways of research design depend on the negotiations with the indigenous community. One research team member has been working with the Ngarrindjeri people on various projects for over a decade and she can speak some Ngarrindjeri language. She built up harmonious and strong working relationships between the community and the research team. Extensive community consultations were made before the commencement of the field research, especially on the protocols to be followed. Flyers were the primary tool used to engage the community by informing the research purpose and scope. English was the language for communications since the Ngarrindjeri became literate in English very early and all the participants spoke English. The data collection instruments including a questionnaire survey and interview questions were tested through a pilot study with two Ngarrindjeri, which were then revised as appropriate and informed the development of final data collection techniques.

3.1 Ngarrindjeri Nation and Study Participants

Ngarrindjeri nation consists of 18 language groups who occupied and still inhabit in the Lower Murray, Coorong and Lakes area of South Australia. They are descendants of Ngurunderi, Ngarrindjeri ancestors of the Dreaming of the Stories. Today, this Aboriginal group is still very strong, with a large and proud community of people still based in the Lower Murray and the Coorong (Trevorrow et al. 2006). The first cohort of 21 Ngarrindjeri volunteers (10 males and 11 females) participated in this project from January to February 2014. The age of study participants (SP) ranged from 18 to 71 years (average = 35). Nine of the 21 (43%) participants were employed full time and seven (33%) working part time in local organisations at Meningie, a town in the Coorong area. Most of the participants who held full/part time jobs were heavily reliant on the Federal government funding; therefore, job uncertainty was always a concern. Only three participants owned a house with mortgage, and the rest (86%) rented. The median household income was $400 per week and the median weekly rent was $140.

3.2 Field Research

The research team travelled to Meningie, approximately 160km distance from the southeast of the South Australian capital of Adelaide. We undertook the field research in the Camp Coorong Race Relations and Cultural Education Centre (hereinafter Camp Coorong) that is a community–based educational facility managed by the Ngarrindjeri Lands and Progress Associations. Camp Coorong was chosen as a suitable location for the field research due to its central place in the Ngarrindjeri country and its central location within the social space of the local people. Camp Coorong is also the place where issues are raised between government agencies, funding bodies and researchers.

The design of questionnaires and interview guides took account of indigenous cultural awareness, protocol and racial sensitivity of the local population. The questionnaires were used to collect participants' everyday information needs, information seeking and sharing and their experiences of using the Internet. The audio-recorded interviews concentrated on gathering indigenous views of the Internet in support of everyday needs, their own information skills as well as the challenges they face. During the tea breaks, over lunch and dinner, there were lively interactions between the researchers and the participants, men and women, Elders and young ones. Figure 1 shows the scene of our fieldwork in Camp Coorong. Field observation notes were made manually at the same time as the researcher was involved in travels with the Elders during their weekend expeditions to sports events, visiting families, and trips to food shopping. The observation notes were analysed in supplementing to the questionnaire and interview data.

The interview transcripts and observation notes were thoroughly read and coded using the open coding method. During open coding "the data are broken down into discrete parts, closely examined, compared for similarities and differences" (Strauss & Corbin 1990, p. 62). The coding focused on the identification of themes, including information obtained from the Internet, Internet use experience, challenges and barriers, and attitudes towards Internet.

Figure 1.   Field research at Camp Coorong Race Relations and Cultural Education Centre.

4   PRELIMINARY RESULTS

4.1   Sources for Everyday Information

The top five accessed sources for everyday information was family members (90%), Internet (76%), friends (76%), the Elders (76%) and television (71%). Families were the most vital source for seeking information, indicating that Ngarrindjeri people preferred to find their information from personal and closer relationships. Distinctive Ngarrindjeri ways of linking with close family and relatives embody central values of their culture. Just being listed after family members, the Internet was considered to be the second most important source for obtaining various sorts of information, being as equally important as friends and the Elders in the community. Most participants who would like to watch morning news also favoured Television, the traditional mass media. On the other side, nearly half of

the participants did not approach government departments/agencies; as one participant stated, "I don't know how to approach staff and I am hesitant to ask because it is not my culture to ask especially if we are not familiar with those staff." Another possible reason of not opting to use government agencies as a source of information is that sometimes their information needs relating governmental matters are not readily available in rural areas.

4.2 Types of Information Obtained from the Internet

Table 1 shows the types of information that the indigenous participants acquired from the Internet.

Types of information obtained from the Internet	No. of respondents	%
Weather forecast	11	69
Culture	5	31
Entertainment	4	25
Finance (online banking)	4	25
E-books	3	19
Health	3	19
Education	3	19
Work	3	19

Table 1.   Information obtained from the Internet

Of 16 Internet information seekers, 69% looked for weather forecast. This may because most of the participants were Park Rangers who needed to know the weather conditions for the day or for the whole week so that they were better prepared. As one participant responded, "I search about the weather for the week because I work as a Ranger and we have to know if it is right time to plant the seedlings for park site location."

This is followed by culture information (31%), including research on their culture, stories and traditional techniques that have been published online as well as cultural coping with loss and grief. Online entertaining and financing information shared the same percentages (25%). The former included downloading free music, games and movies, while the latter involved online banking and paying bills. It is worth to note that 19% indigenous respondents read e-books online. As one respondent said, "I used the Kindle to read and accessed Amazon three times a week to view books". People also looked for health information (19%), education (19%) and employment and job-related information (19%) from the Internet. Here are a few examples:
- I usually download health related topics for my kids. (SP12)
- Sometimes I need the instructions of my daily work, such as plant information. (SP21)

4.3 Internet Access and Use Experience

All but one participant has used the Internet. Nearly 57% indicated that they have used the Internet for more than six years. In terms of the frequency, 12 of them used the Internet daily; five on at least a weekly basis; two used the Internet monthly; and one only used very occasionally (annually). Most of the participants had access to the Internet in offices and homes. The less popular Internet access locations were libraries, schools, and community centres. In regard to the devices, both desktop computers (75%) and mobile/smart phones (75%) were the most frequently used devices to access the Internet.

4.3.1 Reasons for Using the Internet

When asked for the reasons for using the Internet, of 20 Internet users, 15 (75%) mentioned that the Internet provided a wide range of information. Eight participants believed the Internet was fast and easy to use, which saved their time, energy and cost (e.g. searching for housing information via the Real Estate website instead of physically visiting agents). Five said there were various services

available on the Internet, e.g. social networking and online banking. Another three participants mentioned that the Internet was very helpful in communication. They communicated with families, relatives, and friends with no bother of long distance. This is particularly important for Ngarrindjeri participants who live in the town with limited available public transportations and rely on the community bus.

4.3.2 Major Internet Services Used

Some 19 Ngarrindjeri participants answered the question on the Internet services used. All of them used Web search engines. 14 of them used e-mails. 13 browsed specialised websites, e.g. banking websites, real-estate websites, as well as webpages (for news, entertainment, sports, shopping etc.) and logged on social media, including Facebook and YouTube. Only eight participants accessed indigenous websites, including National Indigenous Television that is a channel made by, for and about Aboriginal and Torres Strait Islander people.

4.3.3 Experiences/Feelings of Hesitation in Using the Internet

In addition to the apparently undesirable experiences with the Internet, such as being tired of junk advertisements, safe problems, porn information, and bully information, many participants had suffered from negative use experiences in relation to culture. These may generate a hesitation for them to use the Internet. As participants stated,

- [My husband] had my documents scanned but they disappeared out of the computer that's worrying thing, something like that goes off I could never put it back because I don't know how to. (SP2)
- There is a downside - through e-mails or Facebook that cause a lot of anger and distress and violence because I see it in my own community and other communities. (SP15)
- Traditional knowledge and stories are being inappropriately published online without Elders' permission. (SP5)

4.3.4 Attitudes on Learning and Using the Internet in General

Though the indigenous participants had sorts of feelings of hesitation, they were still eager to learn and use the Internet, as illustrated in the examples below:

- I am on the process now of learning to do it online. (SP2)
- I need to learn this computer stuff and I love to have the Internet. (SP12)
- Using social media and everything like is a good thing. (SP7)
- Internet is the thing of the future and it is very important to learn to use it. (SP15)

4.3.5 Challenges and Barriers on Internet Use

Our preliminary results confirmed the findings reported in previous studies with regard to the barriers on computer and Internet use facing indigenous people (Dyson 2004; Rennie et al. 2013). Low literacy was a major concern for the Ngarrindjeri community and they wanted help and guidance especially for the younger ones. In terms of the learning difficulty, 29% of the participants indicated no difficulty in learning computers, whereas 70% thought they had difficulty at some degree. Two participants at their 60s and 70s found very difficult for them to learn to use computers. For example, they had trouble in locating the right information on the Internet and in evaluating which websites were safe to search.

Another major challenge is the cost and slowness of Internet connection. As one participant commented, "I hope that the Internet line speed in our community could be improved in the future." Our results indicate that smart phones were the preferred device for accessing the Internet by indigenous participants for searching for information, online games and logging on social media. The use of mobile phones in calls, text messaging and the capacity to capture and send images is consistent with the strongly oral and visual culture of Ngarrindjeri community. However, mobile

Internet has its limits as the participants pointed out, "Internet connection is costly and unreliable – downloading large files is limited and slow".

4.4   Views on the Use of the Internet in Support of Culture Transmission

In terms of what aspects of indigenous cultural stories can be transmitted into Web–based technology, one Elder (SP15) responded,

- It will be difficult because of all the different tribes because everyone doesn't hunt the same, we don't hunt the same food, they're similar but… every community or tribe has different culture, so transmitting cultural stories in various media can be difficult especially if the traditional stories are sacred therefore cannot be published on the Internet.
- There is another side of it - I say is a lot of people that will use it [indigenous knowledge published online] in a good way, they [non-indigenous people] will educate their own children using our stories on the Internet that set up by our people.

Elders are concerned that traditional knowledge and stories are being inappropriately published online without Elders permission especially those sacred stories. Ngarrindjeri believes that they can take advantage of Internet and ICTs to disseminate their knowledge to a broad community but with cautions. As participants stated,

- I hope more and more people can understand our culture. The Elders show and teach us stories. If the stories are taped or recorded, more people can search and listen the stories. (SP20)
- Traditional ways has a potential to be adopted to Web–based media but careful caution need to [be] considered, our traditional knowledge needs to be respected not to be exploited, interpret the right way, approval from Elders need to acquire. (SP7)

5   DISCUSSION

5.1   Implications for Designing Training Programs and Internet Applications

It is important to adapt Internet technology to incorporate indigenous cultures including their information and social practices when designing and delivering information products and services for indigenous people. When designing training programs, we must ensure that the materials and instructions are designed and delivered in a culturally appropriate way. The information and knowledge are shared and passed down by showing and phrasing words that should be easy for them to understand and repetition. Making use of the communication mechanisms such as comparisons, metaphors, and visual demonstration that the indigenous people can relate to is very important (McCallum & Papandrea 2009). As one participant stated, "Ongoing mentorship or training through repetitions and tangible objects will echo with our traditional way of teaching".

When designing online contents or information systems for indigenous people, we must ensure to connect to indigenous knowledge ethically and make good use of the technology to provide a virtual voice for the indigenous people. The importance of cultural awareness in indigenous Web design should be emphasised. It is critical to seek an optimal way of saving, preserving and maintaining the Indigenous culture and stories via the Internet without undermining their meanings, significance and integrity (Du et al. 2014). This means that, for a wholly collaborative research partnership, extensive community consultation must be made first and different points of view should be shared.

In terms of young and old, this research offered insights for information system design across the generations. The Elders grew up in an oral culture where the spoken word carries weight. They live with their children and grandchildren from whom they obtain assistance and learn how to use the Internet. Our findings show that the young generations are familiar with oral storytelling traditions but also readily use technology to facilitate their information searching and decision-making. They are familiar with e-mails, PowerPoint presentations and particularly adept at using social media.

Ngarrindjeri insist that the knowledge and culture be treated with respect and it remains under Ngarrindjeri control. They believe that some of the indigenous knowledge can be easily adopted to

Web–based media but with cautions and needs to approve by Elders. As young ones are confident in engaging with online resources so this approach might assist them to learn more about their culture and tradition. There is some knowledge that only relates to female and some knowledge only male allowed to know and should still be separated. Ngarrindjeri recognises the power of the Internet that may let others know their culture is alive and they are proud about this. However, some knowledge cannot be transmitted to any Web–based technology due to knowledge sensitivity and culture restriction.

6   CONCLUSION

This paper reports the preliminary analysis on the data collected via the questionnaires, interviews and field observation with the Ngarrindjeri people in South Australia. The ways in which the indigenous people made use of the Internet and ICTs in their everyday information and social practices were uncovered. The results show the barriers and concerns faced by Ngarrindjeri as well as their views on using the Internet in support of their cultural and knowledge dissemination. The findings ascertain the importance of traditional knowledge in framing community-training programs and may assist in cross-cultural design of adaptable Internet services and applications for indigenous people. Future research includes identifying how ICTs could be used and what Internet applications could be designed in the retention and transmission of Ngarrindjeri knowledge.

7   ACKNOWLEDGMENTS

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