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UNDERSTANDING COMMUNITY NEEDS: A STEP CLOSER TO A DIGITAL LIBRARY FOR COMMUNITIES IN CANADA'S NORTH (Paper)

Abstract: This paper provides insight into the findings from a survey conducted with community members in the Inuvialuit Settlement Region (ISR) in Canada's North. The survey was conducted to develop a deeper understanding of needs and information seeking behaviour of users in the ISR region. The findings from the survey will be useful in developing digital library (DL) platform for communities in the ISR region.

Résumé:

1. Introduction

Digital libraries (DLs) are multifaceted and complex structures that enable access to digital artefacts in variety formats (e.g., text and video) (Kani-Zabihi et al., 2006), and at the same time help in reducing spatial, temporal and access barriers (Shiri and Rathi, 2012). Technology plays an important role but it is crucial to have an in-depth understanding of users' requirements, interests and context in the creation of DL platform (Payette and Rieger, 1998).

The access to information and cultural heritage material in the Inuvialuit Settlement Region (ISR) in Canada's North is limited by many factors, including geographic dispersion of the population i.e., relatively low population density in the region, limited digital artefacts, and absence of digital library (DL) infrastructure in particular. For example, the communities such as Paulatuk, Ulukhaktok, Sachs Harbour, Tuktoyaktuk, Inuvik and Aklavik in the ISR region are spread across ~91,000 square kilometers (Northwest Territories) (Indigenous and Northern Affairs Canada, 2014) and have cultural material in a variety of formats (e.g., photos; audio files). Thus, it is critical for these communities to have a DL platform in order to access cultural heritage material. This paper presents findings from an ongoing survey that focuses on gaining rich insight into overall community needs and information seeking behaviour, their use of technology (e.g., the Internet and devices) and ways in which they access and would like to access cultural heritage material. The deeper understanding of these issues will help in the development of an appropriate DL infrastructure for these communities.

2. Literature Overview

DLs are appropriate platforms for organizing and sharing a large number of multilingual artefacts (Zaphiris et al., 2004) and multimedia content (Hoe-Lian Goh et al., 2006). DLs have the potential to serve users with different types of needs and abilities. For instance, Deo et al. (2002) suggested that "it may be possible to construct an interface that is free from text and that such an interface could be used by illiterate users to access (text-free) content in a digital library" (p. 3). It is crucial to investigate and understand the information needs and information-seeking behaviour of potential users and the current use of technology by those users in order to design and develop different elements of a DL platform. A number of researchers have noted the importance of such investigation. For example, Thong et al. (2002) argue that it is important to identify factors that will impact the use of a digital library i.e., whether the proposed digital library would meet the community needs and the ways it is accessible by community members. Bishop et al. (2000) conclude that the evaluation of "the information needs, situational attributes, and sociocultural contexts" would be useful in creating a digital library for a community (n.p.). Rosenfield and Morville (2002) stress the importance of understanding users' information-seeking behavior, and researchers such as Kulthau (2004) and Wilson et al. (2002) propose models of users' information seeking behaviour. According to the literature, a number of data collection approaches, such as surveys, focus groups and semi-structured interviews (Payette and Rieger, 1998) can be used to understand user's needs and behavior. In this study, surveys were used to collect data from community members in the ISR region.

3. Methodology

A survey was conducted with community members as part of a large multi-method study in the ISR region. The survey was administered in both print and online versions, and both formats had

the same set of questions with slight adjustments for the digital format. The online survey was administered using Survey Monkey and distributed to the target audience by email and by adding the survey link on the IRC website. The online version was developed to primarily target users from other remote communities in the region including Aklavik, Tuktoyaktuk, Ulukhaktok, Sachs Harbour and Paulatuk. The print version of the survey was distributed only in Inuvik through multiple channels. For example: project research assistants set information tables at various locations (e.g., the Public Library, and Midnight Sun Complex recreation centre) and events (e.g., Inuvialuit Day, an Open House at Inuvialuit Cultural Resource Centre (ICRC)) in the town of Inuvik, North West Territories (NWT) during the field season. The print copy of the survey was also distributed to two classes at Aurora College in Inuvik.

The survey had a number of questions relevant to understanding users' needs, their use of the Internet and devices, their search behaviour, and the importance of availability of cultural material online. Participation in the survey was voluntary, anonymous and no individual identifying information was collected in the process. Participants could seek help from other family members or friends in case they did not want to either read the questions or respond in the English language. A total of 66 responses were received by the time of the data analysis for this paper. The collected data were analyzed primarily using descriptive statistics (percentages were calculated based on the total number of participants in the survey and the numbers were rounded to the nearest value in the first decimal point).

4. Key Findings and Discussion

The combined analysis of both the print and online survey revealed that the majority of respondents were from Inuvik (~66.7%) and rest of the responses were from the other communities i.e., Aklavik (~3%), Paulatuk (~3%) Sachs Harbour (~4.5%), Tuktoyaktuk (~6%), Ulukhaktok (~6%), and others (~12%). Please note that the overall sum of percentage is more than 100% because one respondent selected two locations in the survey. This distribution is reasonable considering the population distribution across these communities where Inuvik has the largest number of residents. The following sub-section discusses the key survey themes and findings from the data.

4.1 Languages and/or Dialects

English was the dominant language, and the respondents spoke a number of other languages and/or dialects including Uummarmiutun, Siglitun, Kangiryuarmiutun, Dinjii Zhu' Ginjik (Gwich'in) and others* (Figure 1). The analysis of data also revealed that a number of respondents spoke more than one language and/or dialect. It was important for the research team to understand the different languages and/or dialects users spoke as it will have implications on the DL platform, such as designing a multi-lingual user interface of the DL platform and allowing users to customize the interface of the DL and access material in their preferred language (Hoe-Lian Goh et al., 2006; Thong et al., 2004).

(Note: *response in the "Others" category included Inuvialuktun language. Collectively the three dialects i.e., Uummarmiutun, Siglitun, and Kangiryuarmiutun are known as the Inuvialuktun language). (Source: http://www.irc.inuvialuit.com/culture/language.html)).

[Insert Figure 1 here]

4.2 Learning about Cultural Tradition and Local History

The findings from the survey indicate that the two top sources of information for users in ISR communities are non-technologically mediated sources i.e., "Elders or Community Members" (72.7%) and "Family or Friends" (63.6%) for cultural information. However, the users also use other sources (i.e., other than listed above) such as the Internet (50.0%), the Inuvialuit Cultural Resource Centre (ICRC) (37.9%) and the Public Library (21.2%) to access cultural material. The "Other" category responses included sources such as school, Inuvialuit instructor, NWT Archives, PWNHC (Prince of Wales Northern Heritage Centre), Archives Canada, Dene Cultural Institute, and ICS (Inuvialuit Communications Society). The findings suggest that the traditional sources (e.g., Elders) play a crucial role in accessing cultural information; however survey respondents also pointed to other avenues (as listed above) that are used to access information. Based on these findings, it is expected that the DL platform can play an important role in access to information. For example, the proposed DL aims to provide access to material available at ICRC, thus users who use ICRC as the source of information would find DL platform useful.

[Insert Figure 2 here]

4.3 Use of Internet and Equipment to Access the Internet

One of the key findings from the survey was the use of the Internet. The majority of the respondents (i.e., 95.5%) used the Internet with varying frequency except for a few who do not use the Internet (3.0%), and one respondent did not answer the question. For example, more than three quarters of respondents use the Internet daily and over ten percent of respondents used internet 5-6 times per week (Figure 3). There were no responses for "1-2 times a week" and "Less than once a week". In addition, respondents use different types of devices i.e., desktop, laptop, smartphones and tablets (Figure 4). The survey also revealed that the respondents used different information sources, such as search engines, Wikipedia, social media and other online options to access cultural material.

These findings have implications on the development of DL platform. The findings indicate that many respondents use online options to access cultural material and thus, such users will find the proposed DL a useful tool in accessing cultural material. However, the DL should be designed for multi-device rendering i.e., the DL should be rendered properly on different devices types and screen sizes i.e. desktops, smartphones, laptops and tablets, and such considerations are important in order to enhance the perceived ease of use of a system (Thong et al., 2002). In addition, there are other design implications related to system architecture and visual interface (Harper, 2006), ability to browse and navigate, and usability issues relevant to small screen devices (Buchanan et al., 2002).

[Insert Figure 3 here] [Insert Figure 4 here]

4.4 Online Access to Types of Cultural Resources

Users in ISR communities are interested in accessing different types of cultural material through the DL, and the top choices include: historical photographs (68.7% of respondents), family history (67.2%), oral history (64.2%), language learning material (61.2%), and place name and other land-based knowledge (55.2%) (Figure 5). There are multiple implications of these

findings. For example, the DL platform should have capabilities to host content in different formats such as images for historical photographs and family history; audio file for oral history; and audio/video/text file for language material, and thus a DL should support variety of formats, such as “images (e.g., TIFF, GIF, JPEG)”; “audio and video (e.g. Real, MP3, AVI and MPEG)”; and “text (e.g. ASCII, UNICODE, RTF)” (Hoe-Lian Goh et al., 2006 p. 364).

[Insert Figure 5 here]

There are number of other findings from the survey relevant to understanding the users’ needs, behaviour and ways of accessing material, and they will be included in the conference presentation.

5. Conclusion

This paper presents the highlights of the results of a survey study of the information seeking behaviours and information needs as well as the use of technology of people resident in the ISR region. The paper connects well to the overall conference theme and a number of sub-themes including “discovering” and “listening” to communities, “community research”, and “organization of information for and with communities” as this research focuses on understanding the needs of community; their information seeking behavior and building a DL platform for the communities in the ISR region through the input at each stage of development.

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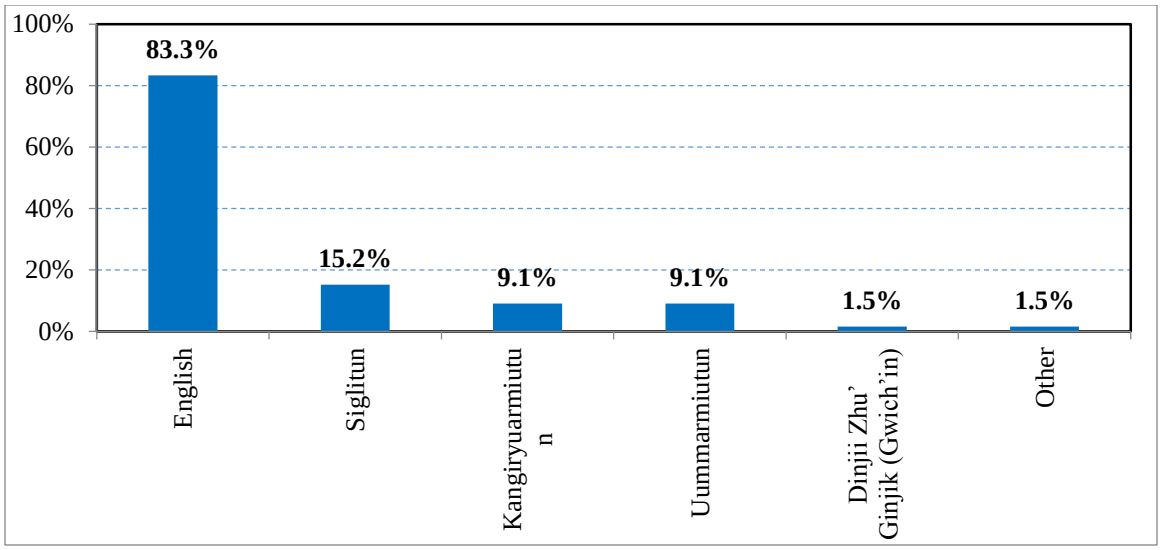

Figure 1. Language and/or Dialect Spoken by Respondents

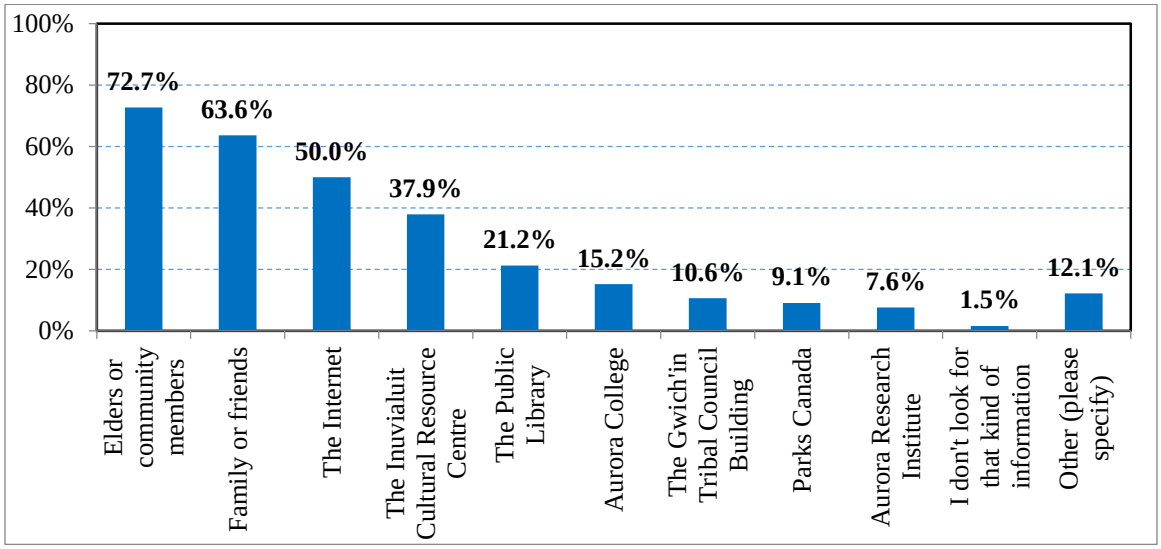

Figure 2. Access to Cultural Tradition and Local History

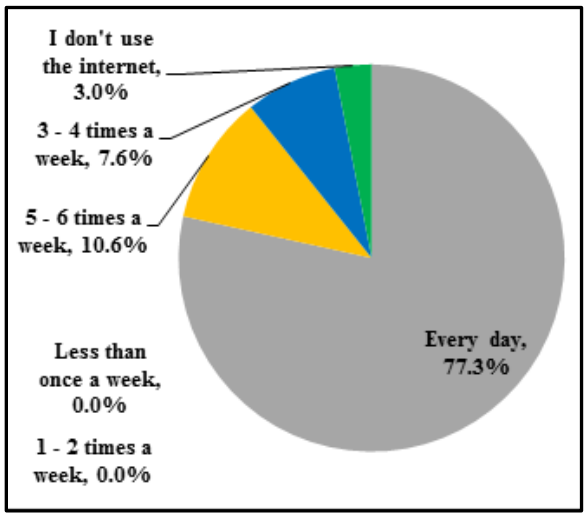

Figure 3. Internet Usage

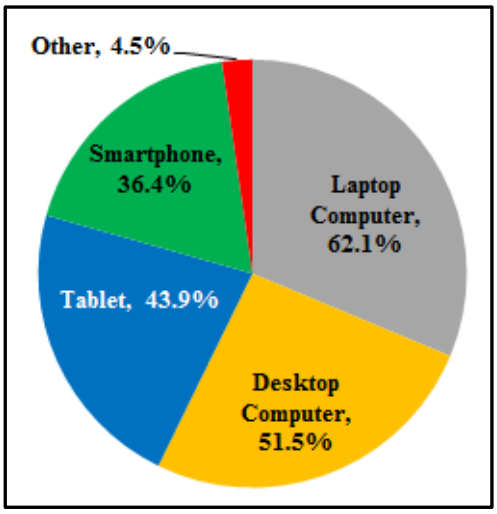

Figure 4. Devices Used

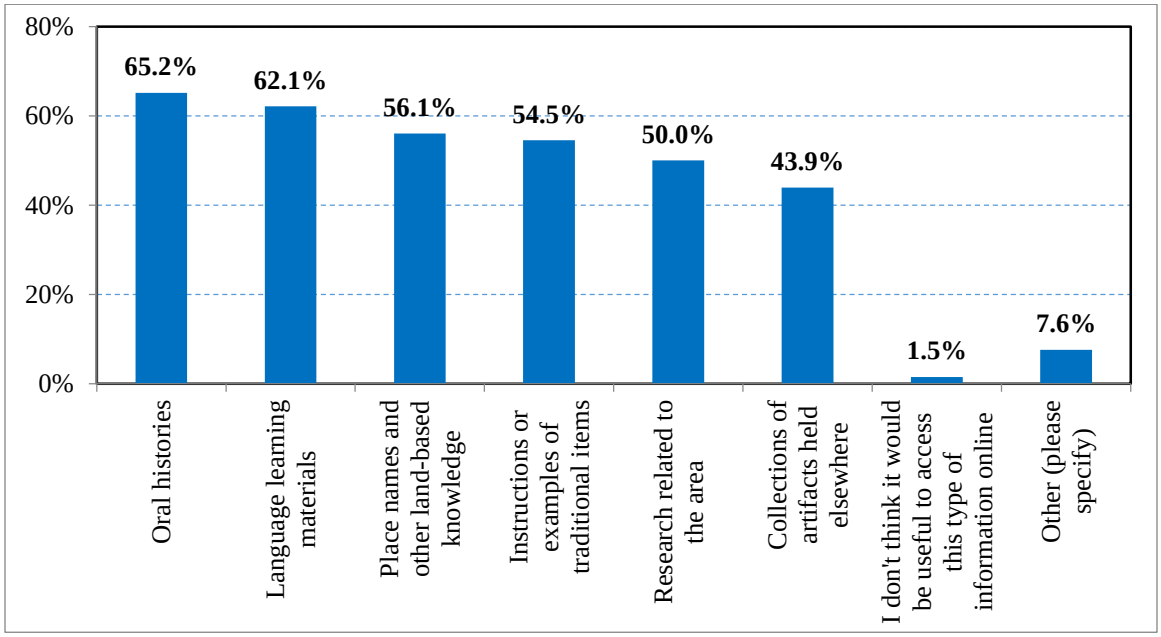

Figure 5. Useful Online Cultural Resources