Encouraging Essential Skills: How Public Libraries Promote Technological Literacy in Rural Communities

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Abstract: Amid rapid technological change and shifting economic activities, the population of many

rural British Columbia communities now requires greater development of digital skills. Today's public

libraries offer a range of digital services and, therefore, represent a significant resource for developing

such skills. This study identifies the extent to which public libraries are promoting the development of

technology skills in rural communities. A qualitative content analysis was conducted on technology

program promotional messaging from rural public library websites in British Columbia. Results showed

that these rural libraries are indeed promoting technology programs in a way that focuses on

technology skill development as an emerging role. With that said, additional measures can be taken to

further refine current messaging, and this study offers several recommendations towards that end.

Keywords: *public libraries, rural libraries, technological literacy, digital literacy, education*

Rural communities in Canada are currently experiencing a mismatch between skills required

for industries of the past and those required for industries in the 21st century. In research funded by the

Government of Canada as part of its Strengthening Rural Canada initiative, Moazzami (2015) reports

that this trend is due in large part to educational, economic, and lifestyle factors that are unique to

rural areas. In general, educational attainment is much lower in rural communities compared to urban

areas, with approximately 20% of the population not achieving a high school diploma. Furthermore,

traditional economic activities in rural areas, such as resource-based industries, mean that more

residents possess production and process-based skills rather than information-based skills that are

now predominant in urban locales. As a result of rapid technological change, workers with skills for the

modern knowledge economy will be increasingly in demand, and those without such skills face

uncertain futures as many traditional rural economic activities decline (2015). Consequently, a shift in

the type of skills developed by rural residents appears to be required for these communities to remain

sustainable in the future. This study aims to provide a better understanding of the ways in which the

development of these skills is currently being promoted in rural communities.

The primary objectives of this research were to identify and describe how public libraries are

currently promoting the development of technology skills in rural communities. As accessible

community institutions, libraries serve as vital sources for semi-structured or informal learning where,

through the course of daily life, people develop new skills to better serve their own lives (Decoda

Literacy Solutions, 2016). In addition, libraries now include a variety of computer and technology

resources, making them ideal places to foster technology skills (Visser & Ball, 2010). In addressing these

objectives, the authors sought to answer the following central research question: *To what extent are*

public libraries promoting technological literacy in rural British Columbia communities?

Since public libraries exist primarily for public benefit and act as partners in the community, the concepts of invitational rhetoric (Foss & Griffin, 1995) were particularly appropriate for guiding the analysis in this inquiry. Conventional rhetoric can be defined as a mode of communication in which change is the goal and, therefore, relies heavily on persuasion to affect such change (Foss & Griffin, 1995). Invitational rhetoric rests on three principles, each of which is aimed at democratization of communication; it is founded on the idea that all people are equal, and it places all parties involved in a conversation on an equal plane. Furthermore, each party has the chance to hear and voice different perspectives and decide for themselves which they wish to adopt (Foss & Griffin, 1995). It is commonly understood that libraries and the public act together to determine the direction and form of public libraries. With this in mind, the ideas underlying the theory proved useful for understanding the strategies used in library promotional messaging.

Findings from the analysis show that, while the subject public libraries are beginning to increase their focus on the role of technology educator through inviting and descriptive program promotion, current messaging lacks the dialogical orientation and explanatory content to effectively encourage the audience engagement and motivation necessary to truly foster technological literacy. This understanding provides insight into how these valuable institutions are currently being positioned as resources for developing technology skills. Such insights reveal the level of emphasis placed on these skills by libraries and whether more can be done to highlight their development as a library function. Technology skill development represents a significant opportunity for both libraries and their visitors. Libraries have the potential to increase visitor traffic while rural residents can benefit from learning practical skills. Ultimately, our goal for this research is to provide those in the library profession and policy domain with a foundation from which to develop an important emerging role for the benefit of their institutions and society.

Literature Review

There is a wealth of existing literature around the topic of public libraries. The majority of this research focuses on the development of public library systems and their intended roles as social institutions. There is far less work outlining evidence of these roles or how they are enacted. What is largely missing from the literature is research exploring how public libraries promote their social and community roles. For instance, if one considers community education to be an important library role, then how are libraries promoting this role and through what channels? Furthermore, what resources are being put towards achieving this goal? These types of questions formed the basis of this study. The following review examines, in order, the evolution of public libraries as public educators, shifting library services and goals, and technological literacy in rural communities. Each of these topics provides background information and context that serve as the conceptual framework for this study. The public library's traditional role as an educator, along with its contemporary services and objectives, must be discussed in the context of the present state of technological literacy in rural areas in order to successfully frame an exploration of the library's role in fostering rural technological literacy.

The Public Library's Role in Educating the General Public

As McNally (1986) notes, throughout history varying forms of libraries have emerged including academic, specialized, religious, and public libraries. Each library form has differing specific goals and clientele, but the common role of providing knowledge and learning resources remains the same. Najowitz, Hamby (1999), and Watson (1994) point out that public libraries are a more recent development in library history, emerging in their modern form primarily in the mid-nineteenth century. This section discusses how public libraries developed, with a particular focus on their role as educators for the public, and how this development unfolded within the Canadian context.

Watson (1994) points out that modern public libraries began to emerge in different parts of North America and Europe during the middle of the nineteenth century. She further notes that library development in the United States is particularly noteworthy due to the speed of growth and focus on public education. Both governments and service organizations spurred this growth as public libraries were believed to hold huge potential as an educational tool for the general public. Libraries began appearing in most cities and towns to provide all citizens full access to learning resources. The driving idea behind public funding for library development was that they could serve to develop skills for an evolving workforce and raise the general education level of all citizens, a key characteristic of promoting a healthy democracy (Watson, 1994). The benefits of this public library model made it increasingly popular in many western countries. As a result, Najowitz and Hamby (1999), and Byberg (1993), note that it was adopted in Canada and parts of Europe.

However, Najowitz and Hamby (1999) also make it clear that library development in Britain during this period originally began for less idealistic reasons. In an era of evolving industrial employment and poor living conditions, growing social unrest existed among the working class. Both the British upper class and social reformers supported the provision of public libraries as a means of preserving social order and defusing revolutionary sentiment. It happened to be a convenient side-effect that libraries could also help educate a previously unskilled workforce and improve quality of life for the working class. In rapidly industrializing societies, the potential benefits provided by developing a skilled workforce were highly valued (Najowitz & Hamby, 1999). Byberg (1993) develops this point further by explaining that as services for adults began to expand to achieve this goal, so too did services directed at children as long-term plans were laid out to develop engaged and skilled members of society. Despite the competing origins of public library development, education would become foundational to the role of the public library, and thus it serves as a crucial component for this study.

The history of libraries as educators outlined above provides evidence that education is fundamental to their purpose, and the question posed in this study aims to highlight this role in a contemporary context.

McNally (1986) states that, after witnessing the growth in the United States, authorities in Canada began developing public library systems in the late 1800's. Growth was much slower than in the U.S. as the provinces developed libraries independently at different times. Due to Canada's unique history in terms of settlement and cultural diversity, both McNally (1986) and Paola Picco (2008) cite major differences in library systems, services, and operations that lasted well into the 20th century. For instance, the Catholic Church held significant influence in Quebec in the first half of the 20th century. A desire to maintain control of education and information caused the church to suppress public library development until the middle of the century (Paola Picco, 2008). Despite delayed and fragmented development, Canadian public library systems eventually matured to closely resemble the U.S. and British models, with education promotion at the forefront of their mission. The existing literature exploring the educational role of Canadian libraries, or any public libraries for that matter, focuses heavily on the development of education as a role and the services offered to fulfil that role. However, there is very little research discussing how libraries create awareness of services in favour of this role, which is a gap this study seeks to address.

Shifting Public Library Services and Goals

With background on the educational role of public libraries, we can now turn our attention to how library goals and services, mainly via technological developments, have evolved to continue fulfilling this role in the present. To that end, this section outlines shifting goals and services aimed at helping libraries serve the role of educator while also providing benefits to their communities. A useful

theory describing how this can be achieved is followed by a review of service developments in recent

decades and what they are designed to accomplish.

Like any social or cultural institution, Hildreth (2012) argues that public libraries must evolve to

remain relevant in response to changing technologies, demographics, cultural practices, and political

or economic circumstances. In addition to education, she claims that libraries are increasingly playing

a role in fostering civic engagement in communities. Not only will success in this role help build and

sustain strong communities, but it will also serve to position libraries as *community anchors*.

Community anchors can be defined as convening places vital to communities where people meet,

discuss issues, make decisions, and conduct business related to their communities (2012). Becoming

community anchors can help libraries remain relevant in their communities while continuing their

educational role, both in the general sense and also in terms of civic issues. In order to foster civic

engagement, libraries must be able to offer the skills necessary for this engagement, which brings us

back to the purpose of this study. Many of these skills in our modern world relate to the Internet and

digital technologies, which highlights the importance of research exploring their development.

As computing technologies have become ubiquitous over the last two decades, nearly any

imaginable piece of information has become available to anyone online. In their review of existing

literature surrounding rural broadband access and the library's role in this regard, Visser and Ball

(2010) outline how public libraries have kept pace with information-based societal trends by installing

computer terminals, offering digital technology and media access, and providing educational

assistance. Their research highlights how the library's role in providing access to technology and the

Internet is increasingly important, particularly for the disadvantaged and geographically isolated who

might otherwise have no access. They describe how the assistance provided for technology services

has been extended so libraries are now viewed as technology educators. Other scholars providing

additional qualitative research have advanced this idea indicating that library professionals are now

calling on libraries to position themselves as digital literacy experts as a further extension of the

education mandate (Clark & Visser, 2011; Norman, 2012). This role is most important in rural areas

where residents have less access to public spaces and resources. In most rural towns, libraries provide

the only public access to computers and the Internet (Sarjeant-Jenkins & Walker, 2015; Visser & Ball,

2010). As such, libraries can play a crucial role in rural communities with respect to technological

literacy that serves as the focal point of this study. This research builds on the identified importance of

the library's role in providing access to technology by exploring the ways in which this access is being

promoted.

Technological Literacy in Rural Communities

Having established some background about traditional library roles and what they look like in

a contemporary context, the focus can now shift to technological literacy which is the subject of this

inquiry. *Technological literacy,* also known as *digital literacy*, has varying definitions, but the most

common one describes the concept as a combination of skills required to understand and use

technological equipment to find, retrieve, and utilize information. Voogt, Erstad, Dede, and Mishra

(2013) point out that these skills are generally accepted as 21st century skills needed to thrive in the

modern world. While Voogt et al. (2013) present this point well, they do so from an educational

perspective focused on youth. Townsend, Sathiaseelan, Fairhurst, and Wallace (2013), along with Visser

and Ball (2010), take an approach inclusive of the broader population, reminding us that as everyday

services including banking, education, health care, government resources, and business transactions

are increasingly moving online, such skills are becoming a necessity for all citizens. Building on this

view, Warburton, Cowan, and Bathgate (2013) find technological literacy can also benefit the elderly in

promoting healthy ageing through community building and maintaining connections with family and

friends. However, in rural areas, opportunities to acquire technological literacy skills are not always as abundant as in more urban regions. The following paragraphs outline current gaps in rural technological literacy and the barriers that maintain these gaps.

Harlan (2014) informs us that, generally speaking, rural communities have lower rates of technological literacy than their urban counterparts. There are numerous reasons for this trend that typically relate back to isolation caused by geographical distance. Distance results in poorer digital infrastructure and slower internet speeds. The cost of technology also increases with distance. Additionally, there are human factors such as lack of expertise for training and lack of learning time due to increased travel (Harlan, 2014; Townsend et al., 2013). In rural communities, public libraries are often the only access point for residents to engage with technology. This is where the question of how libraries are fulfilling their educational role in rural communities becomes important, and therefore, why this study seeks to address it.

Access and availability of technology are only the first step to increased technological literacy in rural areas. There must also be motivation and a willingness to learn on the part of citizens. In an ethnographic approach to studying technology use in rural Chilean villages, Correa and Pavez (2016) find population demographics, lifestyle factors, perceived relevance, and local economic activities all play a large role in determining motivation (see also Townsend et al., 2013; Warburton et al., 2013). Furthermore, a number of practical factors also contribute to motivational issues including cost, training, and access to support (Correa & Pavez, 2016; Harlan, 2014; Townsend et al., 2013). If residents are shown the benefits of technology use and offered ongoing support, it is reasonable to argue there will be reduced resistance to learning. Public library promotion of these ideas may offer a means of increasing technology education in rural communities.

Summary

The existing research offers an extensive background of how public libraries came to be educators and how they have adapted with the times to continue fulfilling this important social role. The introduction of computers and training highlights a response to increased demand for technology services. Research on technological literacy points to a need for increased competency in rural regions and the importance of technology availability and training. While the literature provides a thorough context, it does not help integrate the two themes of rural technological literacy and the public library role of educator. This is the research gap this study seeks to address. Rural areas can benefit from the educational role libraries play in fostering technological literacy, so an examination of current library promotion in this regard can offer beneficial insights for future progress.

Method

For this interprevist study, a qualitative content analysis of rural public library websites in British Columbia was conducted with the aim of identifying themes and determining meanings associated with libraries and technological literacy. British Columbia contains 71 public libraries, but only libraries in communities with populations under 15,000 were eligible. The actual towns containing these libraries often have populations significantly lower than this figure, but population statistics for rural areas can include expanded geographical reach since people living at further distances still rely on services in these towns (BC Stats, 2016). Of the remaining possible libraries, many had limited available data on digital services or programs. Consequently, a convenience sample of 10 websites was selected from the libraries that had available data and met the population criteria. In a study similar to this one, Prendergast (2013) conducted an analysis of content on Canadian public library websites to better understand how libraries are responding to increasing diversity with respect to children's literacy programs and many of the techniques employed by Prendergast (2013) were adopted for this inquiry, including use of a library authority's website listing to identify and access the sites and select a

sample. On each website, the unit of analysis consisted of any pages containing written content related to technology services and digital education programs or events.

The theory of *invitational rhetoric* served as the conceptual framework informing this inquiry. Promotion of services and programs by public libraries can be considered different than that of their corporate counterparts in that libraries are not necessarily seeking to push products in an effort to drive profits. Instead, libraries, funded primarily through public and donor funding, promote their services in an effort to serve and provide benefit to communities. Consequently, libraries are not necessarily focused on persuasion in their interactions with the public. By way of contrast, invitational rhetoric "constitutes an invitation to the audience to enter the rhetor's world and to see it as the rhetor does" (Littlejohn & Foss, 2009, p. 569). In this sense, invitational rhetoric proposes that an invitation to see a certain perspective be offered to all members of an interaction who decide for themselves whether it should be adopted. It also promotes open communication in which additional perspectives can be offered and considered. This stands in contrast to traditional rhetoric in which persuasion is the primary driver of change. The theory is rooted in the principles of *equality, immanent value,* and *self-determination.* Equality emphasizes that all views must sit on an equal plane, immanent value highlights the worth of all people, and self-determination acknowledges that all participants have the right to choose their own outcomes. Another fundamental component is the requirement of appropriate external conditions allowing for mutual understanding. Only when participants feel *safe*, *valued,* and *free* can this occur (Foss & Griffin, 1995; Littlejohn & Foss, 2009). Using invitational rhetoric as a lens to approach this research provided guidance in coding the data collected in library messaging.
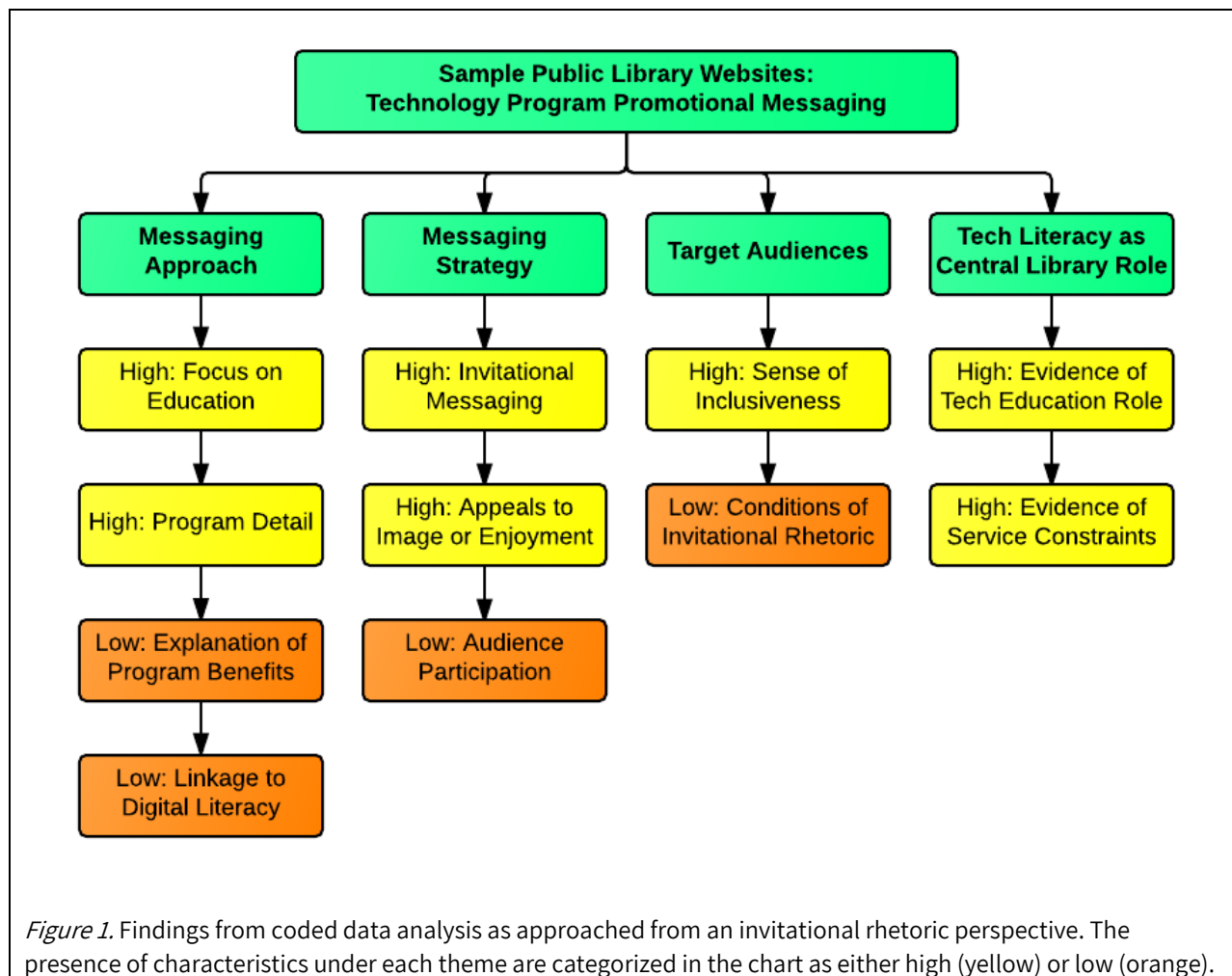
As the data comprising this inquiry represent human activity in a textual manner, an *interpretive approach* was employed to inform the analysis. This approach involved applying the

invitational rhetoric orientation in the analysis of written texts to interpret their meaning (Berg & Lune, 2012). The application of this approach began with a review of the notes taken on where the data was located on each website. The degree to which the content was accessible or prominent provided insight to the importance placed on it by the library. Next, deductive codes were developed and defined for use in the analysis. Examples of such codes included invitational tone, explanation of benefits, description of services, offers of support, and solicitations for feedback. Data stored in the word processing document was then reviewed three times in order to adequately identify inductive codes. Once all codes were created and defined, the data was imported to Dedoose qualitative data analysis software for grouping and pattern recognition. Following the data run, it was possible to assess and evaluate the groupings to identify trends and meanings that assisted in answering the research question. During this stage, as with the initial code development, the concepts of invitational rhetoric were again employed to guide the interpretation by assessing the style, or tone, of the messaging. Lastly, findings from both the coded data analysis and website content location were considered together to provide an idea of the current state of technological literacy promotion.

Findings and Discussion

The findings of this study are comprised of four themes that emerged as a result of trends discovered through the code analysis. A comprehensive review of the deductive codes, derived from concepts of technological literacy and invitational rhetoric, and inductive codes, emerging from the data, revealed four distinct themes around which all the codes could be grouped. Each theme was further analyzed again from an invitational rhetoric perspective. Shown in Figure 1, the themes include *messaging approach, messaging strategy, target audiences*, and *technological literacy as a central library role*.

Figure 1. Findings from coded data analysis as approached from an invitational rhetoric perspective. The presence of characteristics under each theme are categorized in the chart as either high (yellow) or low (orange).

Messaging approach focuses on the content and construction of the messaging, while *messaging strategy* focuses on the goal of the messaging and the tactics used. *Target audiences* examines how the messaging's intended audiences are addressed and considered from the perspective of invitational rhetoric. Lastly, *technological literacy as a central library role* explores ideas relating to technological literacy development within the public library environment. The summarized findings shown under each theme are presented and discussed in detail, next.

Messaging Approach

At the most foundational level, education appears to be the emphasis of most current public library technology program messaging. Ninety percent of the library websites contained messaging

with phrases or sentences indicating that learning or skill development is the purpose of the offering, focusing heavily on highlighting certain skills that can be acquired through the programs. In highlighting this offering of skill development, all 10 libraries offered descriptions of services, such as cost, location, time, contacts, topics covered, or other pertinent information. There were an additional four instances where the service description also included instructor biographies, program partnerships with external organizations, or other information that appeared to speak to the quality of the program.

In contrast to the plethora of detailed service descriptions, only two libraries offered clear explanations of the benefits of taking part in a program. In both cases, the benefits of acquiring the skills taught in the program were highlighted multiple times and used clear examples of situations where such skills could be valuable. For example, one library used resume-building and job applications as a case for learning skills associated with word processing software. By simply listing common or popular topics, such as email or social media, the remaining library messaging only implied that skills learned could be transferred for use in everyday life. Interestingly, the idea of digital literacy seemed to be present in much of the messaging as a benefit in itself. Seven libraries revealed subtle hints that programs provide skills to help improve digital literacy with statements such as "learn the skills you need to navigate your computer". Such an example lacks reference to applicable uses for navigating your computer and simply implies that you should know how. The remaining three libraries explicitly discuss the idea of digital or technological literacy. Following the installation of a new piece of equipment to its collection, one library claimed it would "enable and encourage our community to learn and develop digital literacy skills". From expressions like this, one can see a sense of educational focus, but why is this educational focus important?

Currently, the bulk of public library messaging surrounding technology programs in this sample is written in a manner that aligns well with the long-established tradition of libraries as public educators. Education and skill development appear as the core purpose behind the program offerings. Additionally, having offered numerous other forms of programming throughout their history, these libraries have become effective at delivering rich and detailed information about available services. However, what is gained in thorough description and detail may come at the expense of missed opportunities to provide library users with justification for taking advantage of available programs.

While current promotional messaging outlines services that develop skills useful for many areas of life, in most cases, only an already technologically literate individual would be sure to make the connection between the skill to be learned and its possible real-world applications. Without presuming to know what meanings were intended by the messaging, there also appears to be an inherent assumption that library users may already be interested in learning digital skills. This is where the importance of explaining the benefits of developing digital skills becomes quite evident. Explaining skill benefits and providing examples of useful applications may offer a means of avoiding potential motivational barriers such as those discussed by Correa and Pavez (2016) and Harlan (2014). In particular, barriers related to perceived relevance, lifestyle factors, and population demographics could be reduced with added context for those who may not presently see how these skills could improve their lives. In creating this context, an understanding of audience needs could also help improve its effectiveness. Addressing the unique aspects of rural life may better illustrate how digital skills can specifically benefit rural residents. An example may include a description of how an online government service account could help eliminate lengthy travel to urban office locations.

To a lesser extent, a similar tension exists within the messaging that states digital literacy as a goal. These messages appear to be speaking to people who are already digitally or technologically

literate. In only one case was there any explanation of why technological literacy is important, and in no case was a definition of technological literacy offered. Voogt, Erstad, Dede, and Mishra (2013) describe how important technology skills are in an increasingly digital 21st century world. Offering a simple definition, along with a similar description of why such skills are so valuable, may provide a platform from which patrons can begin to identify with the ideas of technological literacy. Again, doing so from a rural perspective would likely enhance this identification with the library among rural users, so a thorough understanding of the audience becomes increasingly important.

Messaging Strategy

As anticipated, very few persuasive messages were discovered in the sample promotional material. Only one library was found to have words or phrases that could generally be associated with persuasion, and, moreover, they could be further described as "lightly" persuasive. These messages were simple references to learning a skill because others are also learning that skill. On the other hand, five libraries demonstrated a strategy utilizing invitational-style messaging. In all of these cases, the message tone was friendly, casual, and made the reader feel at ease. Commonly recurring phrases included "join us", "drop in", and "come to the library". In some cases, where such a direct invitation was not extended, simple questions were asked of the reader. For instance, "New to email? Discover how to setup an account!" is a typical example of a strategy used to engage the reader. The remaining sample messages that were neither persuasive nor inviting were purely descriptive in nature. As introduced in the previous discussion, these messages were simply composed of service details, descriptions, and logistical information with no attempt to engage the reader. Although, generally, the messaging was not found to be necessarily persuasive, the libraries did tend to employ similar means of conveying to the reader what the programs could offer them.

The primary strategies used to pique reader interest in library programs were appeals to personal image or enjoyment. Instead of offering an explanation of practical benefits, it appears the sample libraries currently favour this technique as a means of highlighting benefit. Appeals to image were found in three cases, and appeals to enjoyment were found in an additional six cases. Overall, this promotional strategy, including one or both appeals, appeared for seven of the sample libraries. Image appeals tended to feature words or phrases that expressed the "cool" factor of the program. In contrast, enjoyment appeals featured either direct references to fun such as "The Joys of e-Reading!" or more implied references to fun including "Drop in…for a chance to socialize with others over coffee as we give you individualized help". What is immediately noticeable about these strategies is that they are highly one-directional and do not promote reader engagement.

Interestingly, reference to audience participation is largely missing in the sample messaging. Only one library featured messaging that made reference to reader participation. In this example, the patron's role in determining what and how they would learn was made clear. This case demonstrated participation in terms of how the patron would be involved in the process of their learning rather than how they could also help develop the library's services. In no instance did messaging demonstrate participation in terms of requests for ideas or solicitations for feedback. The invitational tone of much of the sample messaging appears to create a welcoming and safe atmosphere for readers, but with a distinct absence of audience participation, libraries are only part-way to establishing an invitational environment that may better serve their purpose.

Based on existing messaging, the sample libraries appear to be genuinely interested in ensuring their technology-related services benefit the lives of patrons. The invitational expressions in much of the messaging invite readers to see the library's perspective without any pressure to act. This

exhibits the trademarks of invitational rhetoric in that no effort is being made to change the reader.

Instead, the message is designed to generate understanding

(Foss & Griffin, 1995). Furthermore, this strategy also demonstrates respect for the audience in the form

of invitational rhetoric's core principle of equality (Littlejohn & Foss, 2009). By avoiding attempting to

covertly influence the reader, the libraries are succeeding at both placing the reader on an equal level

and conveying a sense of respect. However, an invitational interaction cannot be truly present without

reciprocal input and thorough knowledge of the intended audience.

The absence of promoted participation in the sample messaging works to restrict the reader's

ability to offer alternative perspectives. In this way, the principle of self-determination is not currently

reflected as the audience lacks the opportunity to provide ideas, suggestions, or feedback (Littlejohn &

Foss, 2009). Without such diverse perspectives contributing to the interaction, the audience is not

afforded the full opportunity to create their own outcome. However, even without direct two-way

communication, a deep understanding of the audience could again prove useful. Presenting a library

context relevant to rural life may provide patrons with a clearer understanding of the value of library

services, thus empowering them to make more self-determinative decisions. It is difficult to determine

why obvious participation requests were absent from the messaging. Perhaps, since many technology

tutoring programs provide individual assistance, the reader is expected to infer their own level of

participation. Nevertheless, it is reasonable to argue that inclusion of participatory elements at the

time of reading could indicate that a more meaningful experience awaits the patron and the library

truly is there to serve their needs, not dictate what those needs might be. Moreover, programs shaped

together may well lead to better quality services.

Target Audiences

With audience participation introduced, the focus now turns to the more general question of the target audiences. In particular, this subsection explores how the libraries' target audiences for the sample messaging were considered and addressed. Overall, the majority of sample libraries were generally quite successful in conveying a sense of inclusiveness, particularly in terms of the diversity of demographic groups represented. Eight libraries offered messaging that, either directly or indirectly, catered to a range of age groups. Direct representation of different age groups was exhibited by several libraries that provided separate promotional materials for each group. For example, one library offered a specific seniors' program to learn basic computer operation while also offering teen and general adult programs. Indirect inclusion of multiple age groups appeared more within messaging from the libraries providing generic descriptive material. A typical example of such messaging includes "get free, basic help with these and other digital topics". It is worth noting that this approach could be interpreted not as inclusive but, rather, as not exclusive. The remaining two sample libraries indirectly excluded some age groups simply because they appeared to offer only one program for one group such as children or seniors.

Interestingly, appearing in nearly all of the messaging were subtle clues indicating that libraries are eager to make clear to the audience that income is no barrier to access. Promotion of services at no cost was a recurring theme. In addition, one library made a point of thoroughly explaining its services in relation to partnerships with other community organizations to offer ongoing support and development free of charge. These inclusive elements in the messaging provide support for the idea that the libraries may be attempting to establish a positive atmosphere surrounding their services.

In attempting to make sense of potential tactics used to create a positive environment for the audience, the presence of such tactics was coded according to whether they fit the required external

conditions necessary for an invitational environment to exist. At least five libraries demonstrated the

presence of one or more of the invitational rhetoric conditions, which include safety, freedom, and

value. Specifically, there was a high presence of phrases used to create a feeling of safety such as

"patient, friendly, one-on-one help". There was a moderate presence of phrases used to convey a sense

of freedom on the part of the patron. An example of this is exhibited by a program aimed at teens that

encourages them to "Go crazy with Tech Kits". Lastly, and quite surprisingly, there was no noticeable

presence of messaging deliberately attempting to make the reader feel valued as an individual and

member of the community. This theme of audiences, and how they are being addressed, has important

implications for the potential impact of the messaging.

Current library technology program messaging is doing an adequate job of addressing a large

diverse audience and, in the process, creating an inclusive environment. Even the few libraries

presently addressing only narrow age groups are very likely not intentionally ignoring the question of

addressing the needs of a diverse public. These libraries may not have the ability to offer multiple

service options to varying demographic groups. After all, the subject libraries operate in small

communities and often have limited available resources. In attempting to create an inclusive

environment, they are demonstrating one of the trademarks of invitational rhetoric, making the reader

feel as though they would be psychologically and physically safe in the library program environment.

However, current messaging is lacking in its ability to establish a sense of freedom and value

for the reader. Such components would be highly complementary to the safety aspect and could

promote an even more enriching experience for potential patrons. An example of freedom could

include further developed references to the patron's role in determining their own learning. As

previously discussed, a solid understanding of the audience could reveal aspects of rural daily life

useful for creating examples illustrating to patrons' topics they can list in a learning plan that

technology skills may address. On the other hand, value could be conveyed through a simple

explanation of why the library desires to help the reader develop such skills. Invitational rhetoric itself

may benefit from additional specific emphasis on developing a thorough understanding of the

audience. Even if the intent is not to persuade, deep knowledge of the audience can reflect a

heightened consideration for their needs. One could argue this practice would align well with

invitational rhetoric's existing concepts of value as a requisite external condition and immanent value

as a foundational principle. Above all, improved messaging incorporating all three invitational rhetoric

conditions will convey to the reader a more collaborative approach to learning and will help develop

greater alignment with the theory's foundational values.

Technological Literacy as a Central Library Role

The final theme emerging from this study centres less on the aim of the messaging and focuses

instead on what the messaging reveals about current technology programs in the libraries. It is

apparent from the material that technological literacy appears to be establishing itself as a central role

in public libraries. First, all the data gathered for this study was found on web pages one link away from

the homepage, except for one case. The pages of interest were either easily located by title on the

homepage or featured on the homepage as a visual banner graphic. Second, seven of the subject

libraries had messaging that offered evidence that technology education is here to stay. There were

various clues present in the data including references to increasing hours for technology tutoring,

ongoing support from external organizations, and the addition of staff instructors as opposed to

volunteers. Furthermore, some libraries now offer official brochures outlining technology services, and

others note technology skills as necessary for use of the library's growing technology resources.

Additional evidence of the growing role of technology education comes from the emergence of more

formal or structured library programs. Nearly half of the sample promoted programs that offer

progressing classes on particular topics or classes that require a pre-requisite class. Although the data

points to the sample libraries' awareness of their evolving technological literacy training role, it also

makes visible the existence of roadblocks that must be navigated by the patron in order to make best

use of its services.

At least seven sample libraries show signs of service constraints that may be restricting the

development of current programs related to technological literacy skills training. Some of the clues

include highly restrictive time limits on visitor appointments, small class sizes for programs, and

limited hours for technology assistance. In each case, it was made clear that these constraints were

unfortunate but unavoidable. Moreover, nine libraries made at least some request for advanced

registration and often alluded to staffing restrictions as the cause for being unable to accommodate

drop-in visitors. It is important to note that several libraries offering multiple services possessed both

drop-in and advanced registration depending on the program, but 70% of the sample offered only

advanced registration. Lastly, half of the libraries relied solely upon volunteer instructors which often

limited visitor appointments. In such cases, the library aspired to provide individual assistance, but this

goal came into conflict with staffing restrictions.

At this point, it is necessary to address what may appear to be conflicting data. For instance,

available hours for technology services appear to be both increasing promoting growth and also

restrictive as a service constraint. Likewise, some libraries are adding staff instructors, and yet lack of

instructors or technology support staff was cited as a service constraint for others. These examples

were positive characteristics for some libraries and negative characteristics for others. It is believed

that this simply reflects the nature of public library operation in small communities. While most of the

subject libraries showed evidence that technological literacy is becoming a central concern, some

appear to have greater available resources at their disposal to develop this role.

Between the prominent placement on library websites and messaging indicating increasing

library commitment to technology programs, the subject libraries researched here appear to be

embodying not just the traditional general educational role, but an evolving educational role focusing

on 21st century competencies. The messaging points to reinforcement of the notion that libraries are

increasingly viewed as technology educators and that this trend is likely to continue (Visser & Ball,

2010). Furthermore, based on the messaging's frequent emphasis on service development, it would be

reasonable to think that the library professionals themselves are increasingly viewing their institutions

as technology educators (Clark & Visser, 2011; Norman, 2012). This is a point that resonates with the

audience when reading the messaging and goes a long way to conveying a sense of passion for the

role. Although this apparent concern for technological literacy shines through the subject messaging, it

is somewhat offset by a significant focus on service constraints. Emphatic wording or constraint

messaging that comprises a significant portion of the overall text works to dampen the enthusiasm

established in the rest of the messaging. Moreover, these sections are typically located near the end of

the message meaning they are the last thing the audience remembers. While service constraints may

be unavoidable, perhaps they need not be featured quite so prominently in messaging that may be the

reader's first encounter with available programs.

Recommendations

The results of this analysis point to several measures that can be adopted and implemented by

libraries to refine existing promotional material. First, clear explanations of the benefits of learning

digital skills can offer examples of the practical applications of those skills. This can also reduce

potential patron motivational barriers or concerns over perceived relevance. Second, adjusting how

service constraints are communicated may have an effect on how the overarching message is received.

Much of the service constraint messaging is currently emphasized and placed at the end of the

promotion. Softening the language and placing this messaging elsewhere in the material could help ensure the audience is not left thinking about constraints after reading but rather is focused on how the library supports patrons' self-determination and self-empowerment. Third, libraries can construct messaging that takes a more participatory approach. Examples include increasing the solicitation of ideas and feedback and highlighting the role played by the patron in developing their learning. Practical application of this approach could include examples of how patron feedback led to service additions or improvements. The purpose of this approach is to create a more collaborative environment and a sense that the patron is valued which will work to ensure a more enriching learning experience. Lastly, with staffing restrictions appearing to severely limit service delivery in many cases, it may be worth exploring potential library internship or co-op opportunities for technology students. This could afford them the chance to develop client service skills while helping to improve library service delivery. Furthermore, increased staffing would work to alleviate what is frequently cited in the messaging as a major service constraint.

Conclusion

Amid rapid technological change and shifting economic activities, many rural British Columbia communities are in a transition period requiring the development of greater digital skills on the part of residents. Today's public libraries offer a variety of digital services and, therefore, represent a significant opportunity to act as resources for developing such skills. As such, the objectives of this study were to identify and describe how public libraries are currently promoting the development of technology skills in seeking to answer the question of what extent public libraries are promoting technological literacy in rural British Columbia communities. The results of this inquiry revealed that rural public libraries are indeed promoting technology programs and services in a way that focuses on skill development and technology education as an emerging role. In doing so, these libraries are

delivering messaging that is inviting and conveys a welcoming and safe environment. With that said, it

appears that additional measures can be taken to further refine current messaging. Foss and Griffin's

(1995) invitational rhetoric, which served as the study's theoretical framework, indicated that friendly

invitational-style messaging may be enhanced by creating a more participatory or collaborative

atmosphere and instilling in the audience a sense of self-worth. In addition, contemporary research

around technological literacy suggests that a clear explanation of the benefits of digital skills, which is

lacking in existing messaging, can improve the perceived relevance of such skills (Correa & Pavez, 2016;

Harlan, 2014). Furthermore, it is important that such explanations fit within the context of rural life in

order to promote greater audience identification with library services and values. Overall, the current

messaging suggests that these rural public libraries are committed to promoting development of

digital skills; however, there is more that can be done to increase the effectiveness of this messaging.

This research demonstrates some of the ways public libraries are promoting the development

of technological literacy within the context of rural communities in British Columbia. It was expected

that there would be a reasonable amount of focus on technology programs since libraries now offer a

plethora of digital resources, but the high level of emphasis present in current messaging was,

admittedly, beyond what was anticipated. It is encouraging to see such commitment to the

development of skills so crucial in a society increasingly constituted by digital communication enabled

by computer and internet technologies. Existing promotional messaging has established a solid

foundation from which to attract patrons to library technology programs. However, the

recommendations provided here could serve to enhance or improve current methods. It is hoped that

library professionals and policy officials may find these strategies useful for attracting visitors and

growing programs. Even with limited service budgets, these strategies can be employed alongside

efforts to grow existing programs which hopefully, in turn, will lead to new sources of funding.

This study has several limitations that are important to note. While attempting to develop a sample as geographically representative as possible, the limited number of rural British Columbia library websites made this challenging. Some remote libraries simply have no suitable data available on their websites which eliminated them from inclusion. Additionally, this research only considered websites in its analysis while acknowledging that other promotional activities are likely undertaken. Nevertheless, this choice was made deliberately based on the limited scope of this inquiry and the fact that libraries, with limited promotional budgets, generally always have websites available for low-cost advertising. Lastly, the four main regional district library websites that service a range of small branches throughout the province were excluded in favour of individual branch websites (Government of British Columbia, 2013). This decision was made due to lack of available data on those larger regional sites. Recommended avenues for future research include an exploration of library messaging using human subjects to gain additional perspectives regarding the promotional material and an investigation into how alternative media, such as social media or video, used to promote technology programs may be more or less effective at establishing an environment conducive to invitational rhetoric.

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