"Digital Youth": ICT use by young people in rural southwestern Manitoba

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Abstract

Rural Canada continues to struggle to maintain its population base, and in particular to retain or attract young people who wish to seek economic and social opportunities in urban Canada. As Information and Communications Technologies (ICTs) become more advanced, communities become more reliant upon them. With access to high quality ICTs now a requirement for society, cellular phones and the Internet, for example, have become a part of life for business and personal use. This study set out to measure the use of ICTs by young people living in rural communities in southwestern Manitoba to ascertain whether access to ICTs influence decisions of youth in rural Manitoba. A survey (n=73) was conducted of students from seven high schools in rural southwestern Manitoba who attended a career conference in Souris, Manitoba in February 2010. Students were asked which ICTs they utilized and how often, what their career plans were, and whether they felt there was an advantage between rural and urban Manitoba with respect to ICT access. The study provides a picture of how youth in rural Manitoba utilize ICTs and whether or not they feel their rural living has disadvantaged them in terms of their ability to communicate through outlets such as Facebook, Twitter, text messaging, e-mail, MSN Chat, on-line gaming, and Skype. The paper concludes by setting a stage for a larger study that encompasses youth across Manitoba, including urban, rural and remote settings.

Introduction

Almost 80% of Canadians live in urban centres (Statistics Canada 2008a). While this proportion has somewhat stabilized over the past decade, many regions of rural Canada continue to see declines, including Manitoba (Statistics Canada 2008b). The Canadian prairie is one such region. Rural communities compete with the educational and employment opportunities offered in urban Canada. Accompanying this situation is the perception and reality of urban Canada providing better (or at least more) amenities and services than rural Canada. One such aspect of amenity and service is access to Information and Communications Technologies (ICTs). As ICTs become more sophisticated in their form and ubiquitous in their use, communities have become more reliant on them. ICTs such as cellular phones and the Internet are crucial for businesses and have become a part of life for citizens.

This study set out to measure the use of ICTs by young people living in rural communities in southwestern Manitoba. The study illustrates how young people in rural communities are using ICTs and assesses whether or not they feel their rural living is a disadvantage to them in terms of their ability to effectively communicate through these means. The findings are based on a survey of students from high schools in rural southwestern Manitoba who participated in the Rural Opportunities Youth Conference on Feb. 11th, 2010, in Souris, Manitoba. Students from nine schools attended, seven of which participated in the survey. All students under the age of 18 were required to obtain written parental consent prior to the conference in order to participate.

Rural youth in southwestern Manitoba are a vital component to the future success of many economic practices within rural Manitoba, and their use of ICTs has not yet been studied or recorded in any detail. Therefore, along with measuring the use of ICTs by these youth, the study also measured the probability

of these youth remaining, or at least returning if they plan to leave, in rural Manitoba and their anticipated career path. The objective of examining this combination of factors is to give an idea of how the economy of rural southwestern Manitoba may be structured in years to come and to decipher if there is a perceived disadvantage for youth in rural areas with regard to their ability to access ICTs. The hypothesis of the study was that those students who utilize ICTs more will have a greater likelihood to stay in rural Manitoba based on the assumption that they feel less hindered by their rurality, in part because of greater accessibility of ICTs. As there have been many initiatives in recent years to remove this communication barrier and lessen the rural/urban divide (Thompson-James 1999; Mclaren 2002; Manitoba Government 2002; Industry Canada N.D.; Cameron et al. 2005; Mckeown et al. 2007), this study provides a glimpse into perceptions of young people living in rural Manitoba related to access to ICTs. In particular, given that ICTs are often viewed as central to providing opportunity, youth perceptions were gauged.

Literature Review

While ICTs are often viewed as necessary for the survival and growth of rural areas; all forms of media and communications are important (Bruce et al. 2006; Ramsey and Moss 2009). The contribution and impact of ICTs to rural economic and social well-being are not new (Daniels 2004; Andrew and Petkov 2003; Oakes 2004; Ramirez 2007), nor is the impact of ICTs on rural space and place (e.g. Kirsch 1995; Graham 1998; Lægren 2002). While some authors have argued ICTs offer a way for rural areas to "overcome the friction of distance" as they have so often been "characterized in terms of their economic and social peripheriality {sic}" (Valentine and Holloway 2001, 384), others have cautioned that the benefits of ICTs for economic growth and development may not necessarily be evenly distributed (Scott-Dixon 2005). A similar notion was put forward by Ramírez (2007, 85) who argued that broadband-based ICTs have "the potential to reduce the friction of distance that rural and remote communities experience." Critics, however, note that ICTs, and in particular Internet usage, could in fact create environments where collectivity becomes dominated by individualism (e.g. Bennett 1998; Althaus and Tewksbury 2000; Shah et al. 2001; Anderson 2006).

Much of the literature on ICTs has focused on access with respect to policy planning (e.g. Andrew and Petkov 2003), education (e.g. Emke 2003; Salinas and Sanchez 2009; Dlodlo 2009), access (e.g. Corbett and Willms 2002), and business (e.g. Alampay 2008; Galliano et al. 2001; Greller and Mackay 2002; Grimes 2005). Exceptions, however, can be found. Lægran (2002), for example, explores unique rural spaces, petrol stations and Internet cafés as offering ICT access opportunities for youth living in rural and remote regions in Norway. More recently, emerging technologies, such as WI-FI have been explored within a rural context (Puel et al. 2007). Several studies have highlighted similar issues in a Canadian context (e.g. Beesley, et al. 1998; Borins 2002; Looker and Thiessen 2003; Cameron et al. 2005). Cameron et al. (2005) detail the difficulties in securing universally available broadband Internet access in rural and remote Manitoba. At that time, Industry Canada estimated that there were approximately 4,200 small communities in Canada lacking broadband access (Cameron et al. 2005).

The study reported in this paper builds upon this work with the purpose of better understanding whether, how, and how much rural youth use ICTs in their daily lives. It builds on research that has examined issues of exclusivity in ICT use (Haddon 2000), notions of communities as place (Flora 1998; Emke 2003), identity as fostered by ICT use (Duxbury 2002), and the importance of ICTs to rural areas (Martz and Sanderson 2006; Romanow and Bruce 2006). The focus on rural areas provides an interesting context to understand perceptions of difference.

Methodology and Study Area

The study area (Figure 1) was defined by the nine high schools invited to participate in the Rural Opportunities Youth Conference on Feb. 11th, 2010, in Souris, Manitoba. The survey was conducted at the conference. The schools were located in Wawanesa, (n=8), Glenboro (n=4), Hartney (n=17), Deloraine (n=14), Pierson (n=16), Souris (n=11), and Boissevain (n=3). The conference was organized by Souris-Glenwood Community Development Corporation which operates in Souris, Manitoba. While the school boards gave permission for all schools to participate, permission slips were not distributed to students in the Cartwright and Melita schools and thus they could not participate at the conference (see below for reasons). To provide a context of the rurality of the communities in the study area with the participating high schools, Table 1 provides the populations of each community and lists the respective schools boards.

A survey method was employed by this study. A questionnaire comprised of open and closed-ended statements and questions was developed in December 2009. It was designed for self-administration. The instrument and survey method was approved by the Brandon University Research Ethics Committee. The survey was distributed to students at the career conference with a 73 students completing the survey, including 16 grade nine students, 51 grade ten students, and 3 grade twelve students. The survey contained general questions concerning where each student uses ICTs most frequently, what their service type is (e.g. Broadband, Dial-Up), whether the individual planned on continuing to reside in rural Manitoba, and how often they would typically use specific ICTs such as Facebook, Twitter, text

Table 1: Schools and community populations.

School Division	Town (Population) with School
Southwest Horizons School Board	Deloraine (977) Hartney (400) Melita (1051) Pierson (RM) (621) Souris (1772) Wawanesa (532)
Prairie Spirit School Board	Glenboro (633) Cartwright (282)
Turtle Mountain School Board	Boissevain (1497)
Source: Populations, Statistics Canada, Census of Population (2006)	

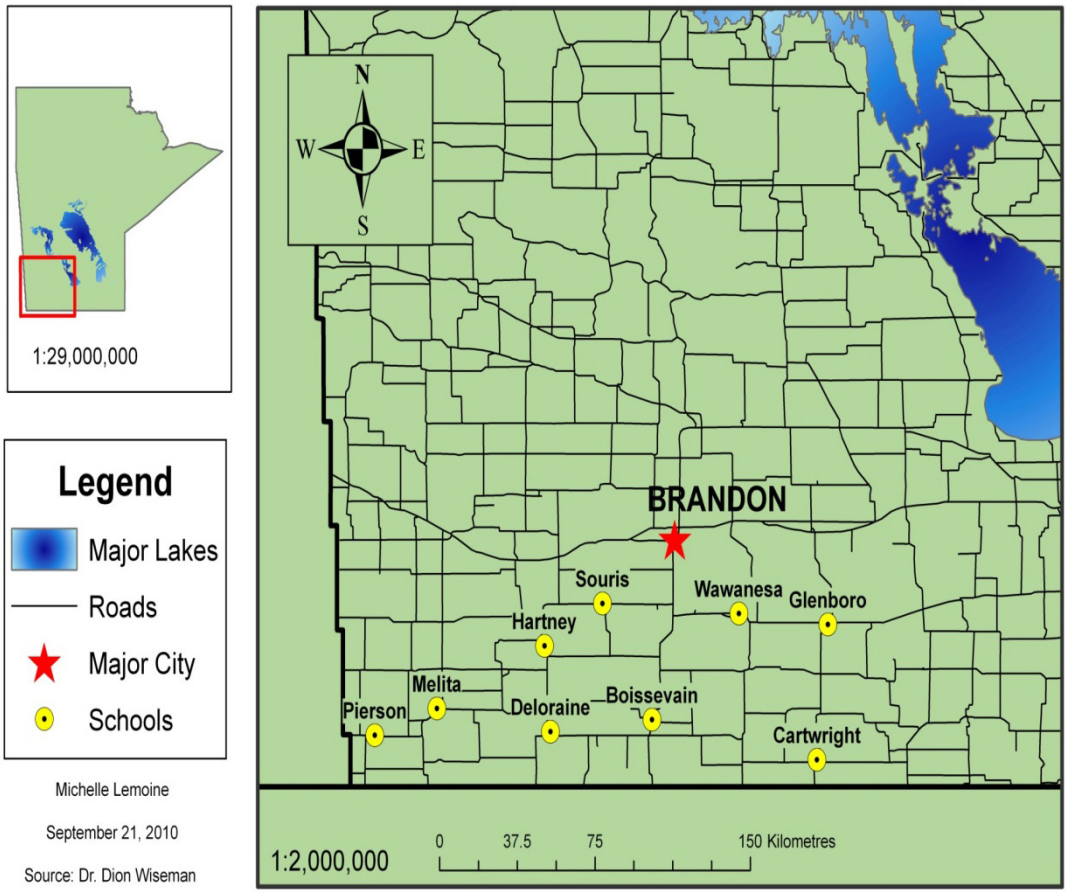

Figure 1: High school locations of survey participants.

messaging, and E-mail. The survey also asked questions about career plans, desire to stay or leave rural Manitoba, and perceptions of advantage between rural and urban Manitoba with respect to ICT access and use.

Important to note is that all students attending the conference were given the opportunity to participate. A total of 147 students attended the conference, of which 73 (49.7%) participated in the survey. While this is a relatively high participation rate, two points need to be made regarding those that did not participate. First, it was the responsibility of the teachers and guidance counsellors within each school to ensure that permission slips were distributed to all students attending the conference. This was not done at two of the nine schools (Cartwright and Melita). Second, there is no way to determine how many of the students failed to have their parents complete the forms, how many parents may have declined participation, or how many simply failed to complete the survey even though permission had been granted. Third, the survey is representative of the students attending the conference, it is not meant to be representative of all young people living in the study area.

Results

Background to Respondents

Most (95%) of the respondents were in grade nine or ten. Participation in the conference was in part a product of the class in which the conference was marketed to. In terms of career choice, a caveat would be that younger students have less clear plans for their futures. Students were asked if they had a career plan, with 55% (40/73) answering "yes", and 42% (31/73) answering "no". [This finding may be considered low as the students were completing the survey at a career conference in which different careers were highlighted, including information being given to students to assist them in making informed career and post-secondary education decisions.] Furthermore, the fact that most were only in the early years of high school would impact notions of a career plan.

While attempting to discern the intended career path of young people living in southwestern Manitoba, the survey also asked for post-graduation plans. The results varied (Figure 2). Perhaps surprising is that almost half (45.2%) of the students stated that they planned to attend university. Others planned on attending college (16.4%), 12.3% planned to do an apprentice-

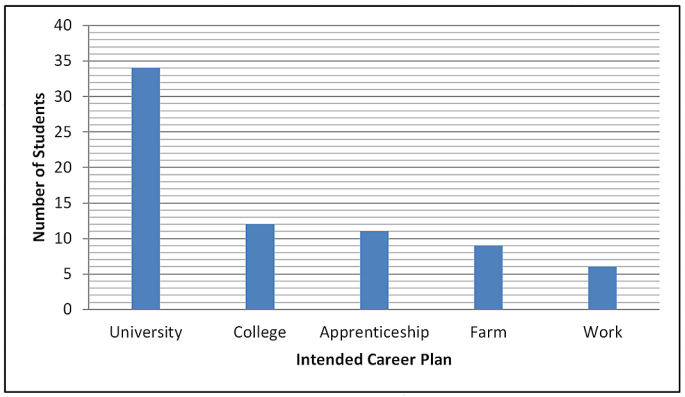

Figure 2: Post-graduation plan.

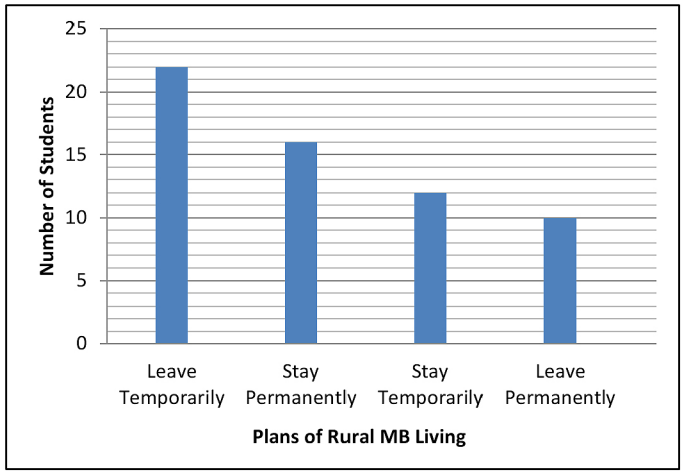

Figure 3: Intentions of residence.

ship, and the remainder planned to either farm (15.1%) or work (8.2%) after graduation. While more students have plans to attend university or college (61.6%), which means moving to an urban centre than those planning immediate rural lives (23.3%), those planning on doing apprenticeships could be either urban or rural. The likelihood of these students continuing to reside in rural Manitoba will be discussed in more detail later. More striking is that while only 55% of respondents cited a career plan, when asked specifically what they planned to do, all respondents expressed a career choice including 73.9% who indicated they planned on attending university, college or doing an apprenticeship.

In ascertaining ICT use, respondents were asked whether they felt their rural residency was a hindrance to their ability to fully utilize these communication technologies. In order to assess this, students were asked two relational questions; first, when did they feel they would live in rural Manitoba (if ever), and second, if they felt that youth living in urban areas had an advantage with respect to access to technology. Responses to the first question were varied, including the fact that only 60 of the 73 students completed this portion of the survey. Of those who responded, 37% (22/60) plan to leave temporarily, 27% (16/60) plan to stay within rural Manitoba permanently, 20% (12/60) plan to stay in rural Manitoba temporarily, and 17% (10/60) plan to leave rural Manitoba permanently (Figure 3). Of the respondants that answered "leaving temporarily" the average intended time being away from rural Manitoba was about nine and a half years.

When future career plans were measured against responses concerning use of, and access to ICTs, no significant differences were reported based on chi-square analysis. This analysis was conducted by creating three career plan categories: 1) university (45.2%); 2) college/apprenticeship (28.7%); and, 3) work/farm/other (26.0%). ICT use was categorized as follows: Facebook (no use; use 1 – 6 times in the previous week; use 7 or more times in the previous week), text messaging (use; don't use), and E-mail (use; don't use). All other ICT's measured in this study were excluded from this test due to the fact that an insufficient number of respondents reported using these technologies (i.e. Skype, on-line gaming, and MSN Chat) (Table 2). There was no statistically significant correlation between ICT use and career plan, suggesting that perhaps the rural-urban divide is diminishing. Having said this, a limitation in the survey was that respondents were not specifically asked whether they use ICTs to research and assess career paths.

ICT use

Students were asked where they access the Internet, by what connection type, how often, and with how many other people. This section provides a baseline for understanding how ICTs affect and influence young people in rural communities. The Canadian Radio-television Telecommunication Commission (CRTC) initiated a fund to extend high-speed, or broadband ICTs to rural areas (McKeown et al. 2007). While improvements in access have been accomplished, 47% of Canadian rural or small town communities did not have access to broadband ICTs in 2005 (McKeown et al. 2007). While the above mentioned statistics are on a much larger scale than the current study, the trend seems to hold true with survey respondents. More than half (54% or 39/72) of the students said they had a broadband connection at home, while 25% (18/72) use a satellite connection or use dial-up to access the Internet at home. Only four students reported

Table 2: Weekly use of E-communications.

Facebook	19 (average)
Twitter	1-20
Text Messaging	146 (average)
E-mail	1-2
MSN Chat	2-3
Skype	1 user reported
On-Line Gaming	1-7

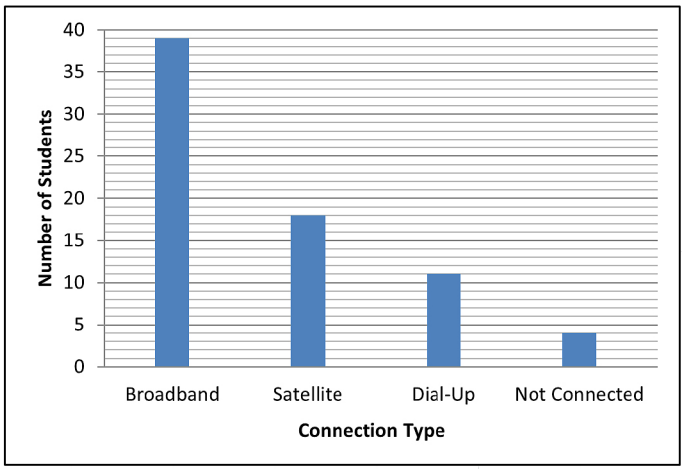

Figure 4: Home Internet connection type.

not being connected at home (Figure 4). Notable is that broadband was the most widely used connection amongst this group, with a satellite connection also being significant and 25%. The low level of dial-up and lack of connection seems to indicate that the digital divide between rural and urban is diminishing. It is also worth noting that all of these students do have access to the Internet at school, however how often and for what purposes was not ascertained in this study.

When measuring an individual's propenstiy to remain in rural Manitoba against the regularity of their use of Facebook, MSN, or E-mail the results of Chi-square analyses indicated no significant difference in ICT use. This result of no difference could indicate little to no perception of the rural-urban divide among the youth sampled. That is, the results seem to indicate that the respondents did not feel there is a disadvantage to accessing ICTs rurally, which may be an indication as to why those leaving rural Manitoba do not have significantly higher rates of use than those intending to stay. Unfortunately, the survey did not ask students about the nature of the information they accessed on-line and how that information informed their decisions to stay in or leave rural Manitoba.

When the intention of remaining in rural Manitoba was measured against an individual's volume of text messaging the results showed that those indicating an intention to stay living in rural Manitoba appeared to utilize text messaging as a form of communication less than those students indicating an intention to leave post-graduation. When conducting the Chi-square anaylsis on these two variables the propensity to remain in rural Manitoba was divided into two categories: leave rural Manitoba (40.8%) or stay in rural Manitoba (59.1%). Text messaging was divided into two categories: text message and don't text message. Of the 71 students that responded to this portion of the questionnaire, 65.5% (19/29) of those intending on leaving rural Manitoba utilized text messaging at least once in the seven days prior to the conference. Those students intending to remain in rural Manitoba 35.7% (15/42) had utilized text messaging services at least once in the same week (Chi square test at the 95% confidence level). Text messaging was the only ICT use that showed any variation when measured against the propensity to remain in rural Manitoba (i.e. Facebook, E-mail, MSN Chat showed no differences).

With the Internet being widely accessible for the large majority (94%) of respondents, their use of ICTs may be relatively significant. This research also sought to ascertain how youth use popular ICTs (i.e. social media), including: Facebook, Twitter, text messaging, E-mail, MSN Chat, Skype, and On-Line gaming. Each respondent was asked how many times in the previous seven days they had used the above mentioned ICT including social media. Students accessed Facebook an average of 19 times in the seven days previous to completing the survey (Table 2). The average number of text messages sent in the same seven days was 146. While Twitter ranged anywhere from one time to 20 times accessing, MSN Chat was only used between two and three times, E-mail between two and three, and only one respondent reported ever using Skype. Most respondents, 92% (67/73), said this was a typical week for them.

Students also indicated that the people they communicated with through these means were regularly from their local community (on average 15 people from their local community), from outside their local community but still within Manitoba (on average 14 people), and demonstrating a declining trend in the number people that are communicated with as their physical distance became greater (Table 3). The local culture of their communication could be reason for so few mentioning the use of Skype. On average, six people are communicated with (through these ICTs) who live outside Manitoba but still within Canada and on average two people internationally. Again, the majority, 89% (65/73) responded that this was a typical week for them.

In 2001, Statistics Canada issued a report on access to ICTs. This report states that 29.4% of rural Manitobans aged 15 and over had an Internet connection at home in 2000, comparable to rural Saskatchewan at 28%, and lower than urban Manitobans at 33.5% (Statistics Canada, 2001). Based on the survey reported on in this paper, this number has, not surprisingly, increased in the past ten years. According to Corbett and Willms (2002), ICT use in schools will be beneficial for students in that it will improve their academic performance and increase student ability to adapt and apply technology in their jobs. That being noted, it is also reported that, "over 75% of students use computers at home, strengthening the case that using ICT to improve on students' skills and knowledge will require increased access at home" (Corbett and Willms 2002 , 9). Looker and Thiessen

Table 3: Destination for communications by respondents.

Location	Number of Respondents
In their community	15
Outside their community but within Manitoba	14
Outside Manitoba but within Canada	6
Internationally	2
Source: Authors' Survey.	

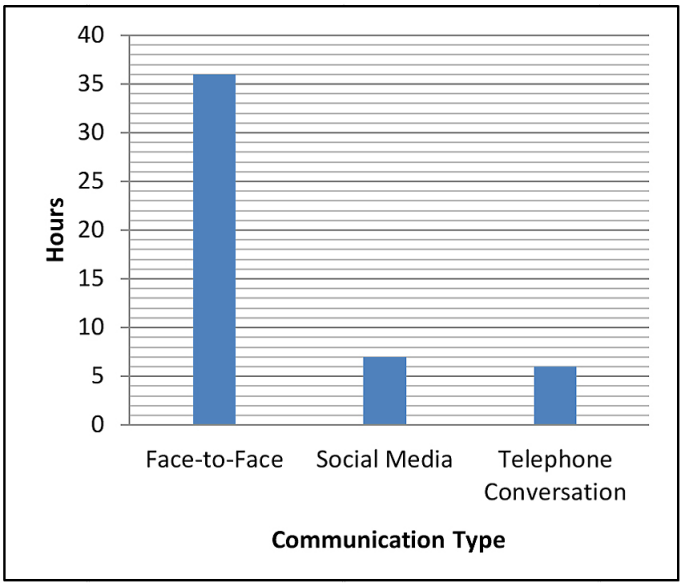

Figure 5: Average hours spent communication through various outlets.

(2003a, 14) reported that "ICT use and support in the school is lower in rural as compared to urban schools." This is contrary to this study's findings which found that 49% (36/73) of respondents felt that youth living in an urban area did not have an advantage with technology, while 45% (33/73) felt urban youth did have an advantage. Four of the 73 did not respond to this portion of the survey. With this almost equal divide in opinion it is worth noting that amongst these students the majority of communication occurs on a face-to-face basis. On average, in one week, students reported spending 36 hours communicating on a face-to-face basis compared to seven hours communicating through the social media (Facebook, MSN Chat, Twitter), and six and a half hours communicating in phone conversation (Figure 5).

Perceptions of advantage

The last question of the survey asked respondents, "In your opinion, do youth living in rural areas have an advantage with E-communication technology over those in urban centre like Brandon or Winnipeg?" Thirty-three respondents replied in the negative, 36 in the positive. Four did not respond. All but 12 respondents provided written responses, most of which were simply one-liners. As noted in Table 4, there were trends in the written responses provided; however, not all students took the opportunity to provide written comments seriously. Respondents who felt there was an advantage in rural areas cited points relating to necessity because of distance (e.g. "rural communities have people spread out so it is harder to communicate otherwise") and the lack of other social opportunities in rural areas (e.g. "because there isn't much in rural communities, so people tend to go on Internet more often").

Two different reasons were cited for responding in negative to the question about rural advantage (Table 4). First, some respondents indicated that urban youth had the advantage, primarily due to access to technologies and services (e.g. "cities have more service towers, larger populations to communicate with, more outlets selling modern technology, more people knowing about technology"; and simply having a greater population (e.g. "not as many people {in rural areas}"). These comments are consistent with the findings of Looker and Thiessen (2003a, b). Several respondents commented on lack of high speed Internet access (e.g. "don't have highspeed"; "weaker wireless service"; "better Internet and connections in the city"; "cause there is little chance at different Internet source other than dial up and bad cell service").

Second, several respondents responded in the negative as they felt there was no advantage either way (e.g. "no, because everyone has access to some form of technology"; "because everyone can use the Internet, E-mail, etc."; "both, because everyone is able to communicate with anyone"; "everybody has cell

Table 4: Sample of written responses regarding advantage with E-communication technology.

Advantage	Comment
Yes Rural has the Advantage	"{in} rural areas people live farther away from each {other} so this way it's easier to communicate unlike urban areas" "rural communities have people spread out so it is harder to communicate otherwise" "because there isn't much in rural communities, so people tend to go on Internet more often" "because you are farther away from others" "because we need it because we are more remote and don't see as many people in a day"
No Urban has the Advantage	"cities have more service towers, larger populations to communicate with, more outlets selling modern technology, more people knowing about technology" "not as many people {in rural areas}" "don't have highspeed" "weaker wireless service" "better Internet and connections in the city" "cause there is little chance at different Internet source other than dial up and bad cell service" "lot's of country people have dial-up" "lots of families have dial-up still so it is very difficult to use these things"
No No advantage	"no, because everyone has access to some form of technology" "it's the same" "because everyone can use the Internet, E-mail, etc." "both, because everyone is able to communicate with anyone" "everybody has cell phones and some people just call people or text them instead of going to see them" "what's the difference where you live"
Neutral/no opinion	"all the same" "everyone in Brandon and Winnipeg use the same e-communications"
Not Taken Seriously	"xxxx is dumb" "yes because I love the country" "rule {sic} rules" "rural is better"
Source: Authors' Survey	

phones and some people just call people or text them instead of going to see them") (Table 4). As one respondent noted, "what's the difference where you live?" This last comment is perhaps reflective of improvements in access to cell phone service and broadband networks. Together, the written comments, while brief, do illustrate a divide among youth regarding the advantages and disadvantages of living in rural versus urban Manitoba. As issues of ICT access in remote Manitoba have been highlighted elsewhere (e.g. Cameron et al., 2005), these comments also provide a context for further studying this issue by obtaining the perceptions of young people from across Manitoba, including urban, rural, and remote.

Conclusion

Young people living in rural southwestern Manitoba have seen great improvements in their accessibility to ICTs in recent years. However, it would be beneficial for this survey to have a relatable comparison to a nearby urban centre such as Brandon, Manitoba. This survey's findings have been significant in assessing the ability of rural youth to access to ICT and also in determining how the social media influences the lives of these youth. With young people spending approximately one hour each day communicating through these outlets, the social media has become a more important outlet for young people living in rural Manitoba to stay connected to friends near and far. Future research could include a large-scale survey to broader communities, rural, remote, small town, and cities would be useful to more comprehensively understand the similarities and differences in perceptions of ICT use. Such a study would need to explore specifically how youth use social media to inform their decisions about career paths and intentions to reside in or move away from rural communities.

This study highlighted several key aspects to ICT use among young people. First, it appears that rural youth are engaged in several types of ICTs. Perhaps surprising was the lack of involvement with Skype and on-ling gaming. This could be due to the sample (e.g. not interested; few people to communicate with in this regard) but could also be a reflection of the limitations of the ICTs available in their particular communities (e.g. broadband). Second, students were very mixed about whether there was an advantage or disadvantage to being from a rural or urban community with many feeling there was no advantage either way. Third, while the respondents were primarily in junior grades (9 and 10), it is perhaps enlightening that such a high percentage have plans to either stay, or at some point return, to rural Manitoba. A larger study, and one that ensured better representation across high school grades, would provide a better benchmark of use, advantage, and future goals with respect to living in rural Manitoba. While some research has addressed aspects of ICT use, and limitation, across Canada (e.g. Cameron et al. 2005; Looker and Thiessen 2003; Ramsey and Moss 2009), a broader study is needed that reflects the urban, rural, and remote makeup of Canada.

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