



Impacts of Low Literacy Levels in Rural New Brunswick

*Rural Team New Brunswick
Rural Secretariat*

Canada 

A literature review by

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Executive Summary

Introduction

Competency in literacy is increasingly recognized as a key fundamental for individuals wishing to participate in the labour force in a meaningful way. Low literacy levels are especially detrimental to rural communities, including those in New Brunswick, because of an aging workforce, youth out-migration, and focus on low skill primary industries. Low literacy levels have negative impacts on individuals (such as children, youth, adults and seniors), health and well being, community participation, training, labour force, employment, productivity, and economic development.

The Rural Secretariat (New Brunswick) commissioned the Rural and Small Town Programme to summarize the impacts of low literacy levels in rural New Brunswick through a literature review, as well as comprehensive inventory of all literacy programs and services available in the province as of March 2008. This report outlines goals and objectives of the project, the methodology, the summary of the literature review, and findings from the inventory. The inventory itself is a separate interactive and searchable Excel database with cross referencing capabilities.

Goals of the Project

The goals of this project were:

1. To provide a literature review on the impacts of low literacy levels in rural New Brunswick and in particular on children in the public school system, youth, working age adults, and seniors.
2. To review and provide an inventory of all literacy related services currently offered in New Brunswick.

Methodology

The methodology for this project involved a literature review and the development of an inventory of literacy services and programs in New Brunswick. Our literature search included journals, online journal databases, websites of literacy related organizations and various federal and provincial government departments. For the inventory over 40 known organizations or individuals were originally contacted, which led to others we had not been aware of. The inventory was designed to include name of the organization, programs or service description, contact information, delivery language, target groups, and region of delivery. Information received was entered into an Excel database, and then sorted geographically by County.

Defining Rural and Literacy

For the purposes of this literature review, we define rural New Brunswick as all regions outside of the three major urban centres of Moncton, Saint John and Fredericton. Literacy is more than being able to read and write. It means understanding and being able to use a variety of information required to function in today's world. The report employs the literacy levels used in the International Adult Literacy Skills Survey (IALSS). IALSS recognizes four domains of literacy – prose, document, numeracy and problem solving. The prose, document and numeracy

domains have five levels of increasing difficulty while problem solving has four. In all domains, Level 3 is the acceptable level for an individual to function in the modern economy and a knowledge-based society. See the Appendix for a further explanation of the skill levels in each domain.

Literacy in New Brunswick

New Brunswick's average literacy, numeracy and problem solving skills are below the national average. At least half of the working age population (16-65) is at Level 1 or 2 in all four literacy domains. Regionally, the lowest and second lowest level performers are found in rural areas around Grand Lake in Queens and Sunbury Counties, Acadian coastal villages in northern Kent County, the Acadian Peninsula, and northern regions of the province. With the exception of the Grand Lake area, all are predominantly francophone areas. In contrast, the areas home to the highest level performers are urban and specifically in and around Moncton and Fredericton.

Low Literacy Impacts on Children, Youth, Adults and Seniors

The literature uncovered a variety of impacts that low literacy levels have on individuals. For children low literacy can result in poor health, anti-social behaviour, being destined for low achievement, and a decreased ability to learn. In youth (ages 15 to 24) low literacy may negatively impact their health, they have a decreased ability to learn, drop out of school, may have criminal records, develop substance abuse and psychological challenges, and need to enter adult literacy programs. Adults living with low literacy often feel embarrassment and shame, have poor health and lower life expectancy, increased chance of accidents, are unable to reach their full potential, unable to contribute fully to society, and have limited options for employment. Seniors with low literacy levels also have poor health because it is difficult for them to make informed health care decisions. It is also difficult to manage their housing and financial affairs, and they are unable to take part in life long learning.

Social Impacts on Rural Communities

This section discusses impacts on community renewal, health and well being, social exclusion and community participation. Literacy lies at the heart of the social components of community revitalization. As indicated in the previous section, low literacy can lead to poor health. Specifically the literature shows that low literacy is linked to a shorter average lifespan, greater risk of illness and disability, smoking, poorer nutrition, neglecting seatbelts and bicycle helmets, working and living in unsafe environments, and stress. The literature also supports a link between literacy and civic engagement. The lack of participation among those with low literacy is connected to social exclusion. Those with low literacy levels are excluded by their lack of confidence and inability to voice their opinions. This reality presents challenges for broad based participation in community development for rural communities in New Brunswick. Higher literacy levels are associated with a healthy democracy. People with lower literacy levels tend to be less optimistic and less able to deal with change. They are also typically less familiar with government programs. Those who do not vote do not get their voices heard. Furthermore, low literacy can also lead to criminal activity

Economic Impacts on Rural Communities

Literacy clearly impacts economic development and in particular training, labour and employment, productivity, economic growth and participation in the new knowledge economy. Interestingly, while literacy may generally impact social outcomes the same in both rural and

urban communities, low literacy seems to be especially detrimental to rural community economic development. Literacy and training are undeniably linked. However, for people with low literacy there are many barriers that exist to access training and upgrading such as embarrassment and shame, lack of transportation, and low income. When learning is diffused throughout the less-educated members of the workforce, the community's prosperity is significantly enhanced. The average proficiency scores of those employed are higher than those who are either unemployed or not in the labour force.

The type of employment matters as well. Rural communities with a large percentage of seasonal and primary industry related occupations tend to have lower literacy rates. Historically, employers in primary industries did not require high literacy levels from their employees. Those with low income jobs also tend to have low skill jobs where the skill requirements have not changed since they began working in their job, and thus no training or upgrading has been needed or offered by their employers. The result is that these workers get trapped in their low skill jobs with little opportunity to advance their literacy levels and other skills. In today's value added world, this does not bode well for rural workers and rural communities. Low literacy levels in communities translate into a low skilled workforce and labour force shortages, which in turn contribute to low levels of productivity. In the knowledge economy, literacy training and life long learning are more important now than ever before because of fast paced and ever changing technologies.

The Inventory

Organizations and individuals contacted to contribute to the inventory yielded a total of 94 entries. Organizations which provide resources but not a direct literacy program or service (such as the Literacy Coalition of N.B. and the National Adult Literacy Database) were not included. In some cases, specific information related to affiliations, and the languages the program or service is offered in were not available. Follow-up contacts were made, but replies were not provided in all cases. Of the 96 programs, eight programs are offered across the province and offer programs/services for young children, youth, adults, and seniors. Networks of adult literacy teachers exist across the province, most notably through the Community Academic Services Program (CASP) and Community Adult Learning Program (CALP). Family Resource Centres are the primary providers of literacy-related services for young children and their families. Laubach Literacy Councils exist across the province and depend solely on volunteers to carry out their one-on-one approach. Urban areas tend to provide more literacy-related programs and services than rural areas. There appears to be a gap in programs/services offered for youth ages 6 – 18, with their literacy-related issues primarily left to the public school system. Further to the findings of the literature review and others, there appears to be fewer programs/services offered in francophone areas than in anglophone areas.

Summary

New Brunswick faces a number of challenges in increasing its literacy levels, especially in rural communities. Rural regions face additional challenges including fewer services, lack of transportation, and an aging workforce. However, improving literacy levels has the power to improve all aspects of rural communities including social cohesion, community participation, volunteerism, entrepreneurship, and economic development.

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1. Introduction

Competency in literacy is increasingly recognized as a key fundamental for individuals wishing to participate in the labour force in a meaningful way. There are lower levels of literacy among rural citizens compared to their urban counterparts. When this is coupled with an aging workforce and an out-migration of younger people, rural employers have found it increasingly difficult to find qualified people to work. In addition, some employers are struggling with how to improve the literacy levels of their current employees so as to achieve greater productivity. In turn these issues related to low literacy levels have detrimental impacts on rural communities.

The Rural Secretariat (New Brunswick) commissioned the Rural and Small Town Programme to summarize the impacts of low literacy levels in rural New Brunswick through a detailed and succinct literature review, as well as a comprehensive inventory of all literacy programs and services available in the province as of March 2008. The project also has a focus on the linkages between literacy and community economic development.

This report outlines goals and objectives of the project, the methodology employed, the summary of the literature review, and findings from the inventory. The inventory itself is a separate interactive and searchable Excel database with cross referencing capabilities.

2. Goals and Objectives

The primary purpose of this report is to provide a summary of what is known about the impacts of low literacy levels in communities, and where possible, specifically in rural New Brunswick communities.

The goals of this project were:

- To provide a review the literature on the impacts of low literacy levels in rural New Brunswick and in particular on children in the public school system, youth (15-24), working age adults, and seniors.
- To review and provide an inventory of all literacy related services currently offered in New Brunswick.

This report is designed to provide sufficient and relevant information that will assist the Literacy Working Group of Rural Team New Brunswick to know more about the impacts of low literacy levels for rural development in the province. The Group will use this information to develop guides for adult learners interested in increasing their literacy skills, and for small businesses who want to improve the literacy and basic skills of their employees.

3. Methodology

The methodology for this project involved a literature review and an inventory of literacy services and programs in New Brunswick. Our approach to the literature review was to

develop a synthesis of recent and current knowledge about the impacts of low levels of literacy in rural New Brunswick. In particular we were concerned with impacts on seniors, working age adults, young adults, and children in the primary and secondary school system. Our geographic focus was rural communities in New Brunswick. We also examined province wide, and Canada wide studies, as well as studies in other rural locations in Atlantic Canada to serve as context and for comparisons.

Our literature search included journals such as the Journal of Rural Studies, Rural Sociology and Progress Magazine; online journal databases such as Proquest, JSTOR and Science Direct; literacy related organizations like Literacy Coalitions of New Brunswick and Nova Scotia, the National Adult Literacy Database, the Canadian Council on Social Development, Canadian Council on Learning, etc.; and various federal and provincial government departments such as Statistics Canada, National Resources Canada, Human Resources Development and Skills Canada (HRSDC), New Brunswick's Department of Post-Secondary Education, Training and Labour; and francophone sources such as the Université de Moncton, and the Institut canadien de recherche sur les minorités linguistiques.

The inventory was conducted primarily through personal and email contact. Numerous follow-up contacts were made in an attempt to make the database as inclusive as possible. Some organizations directed us to their websites; we gathered additional information from website searches where we had had no response. Over 40 known organizations or individuals were originally contacted, which led to others we had not been aware of.

Organizations contacted were asked for: name of their organization; description of programs or services offered; contact information; what languages their programs/services are delivered in; who their target group (s) are; and region the programs/services are offered in. Further details were obtained from the National Adult Literacy Database's website (<http://www.nald.ca/litweb/province/nb.htm>).

Information received was entered into an Excel database and then sorted geographically by County. The database allows the information to be cross-referenced or sorted by a variety of descriptors and information fields. The information contained in the database is as exhaustive as possible, given the project's time constraints, as well as the completeness of the information provided by contacts through email and by telephone, and from available websites.

4. Literature Review: Impacts of Low Literacy in Rural New Brunswick

a. Introduction

Literacy is considered a basic need, essential to living a healthy and productive life, and to reach one's full potential. Strong reading, numeracy and problem solving skills lie at the heart of all learning, ability to participate in the labour market, and general well being. Without fulfilling this basic need, people can suffer from poverty, poor health and unemployment. Low literacy levels impact individuals (such as children, youth, adults

and seniors), families, and communities. Literacy abilities enable people to participate in their communities, stay healthy and productive, make wise consumer decisions, and create and benefit from social networks. Low literacy levels constrain collective ability for community economic development. Few studies (CRDE, 2000; Gluszynski, 2007; Orion Marketing Research, 2003) have focused on rural-urban differences in literacy levels and impacts in New Brunswick. These studies found that lower literacy levels in rural communities can also lead to less productivity, less economic growth, increased crime rates, and a generally poorer community both economically and socially.

This literature review begins by exploring definitions of rural and of literacy. It continues with a general overview of the literature found, the state of literacy in New Brunswick communities, and impacts on children and families, youth, adults, and seniors. The review goes on to examine impacts on social outcomes in communities such as community renewal, health and well being, and social exclusion and civic engagement. Impacts on rural community economic development are also discussed including training, labour and employment, productivity and economic growth, and the new knowledge economy.

b. Defining Rural

None of the studies we found that look at literacy in rural New Brunswick nor do those in Prince Edward Island and Nova Scotia provide a definition for what they consider or define as rural. However, for the purposes of this literature review, we define rural New Brunswick as all regions outside of the three major urban centres of Moncton, Saint John and Fredericton.

c. Defining Literacy

Literacy is more than being able to read and write. It means understanding and being able to use a variety of information required to function in today's world (PHAC, 2000; Torjman, 2006). According to Brink (2006) it is not about whether or not a person can read, but about how well he or she reads. Perry (2003a) explains that for many years literacy did mean reading ability but now it is about functioning in society. Furthermore, she explains that the focus in literacy today is not on illiteracy but low literacy skills. Rubin (2004) uses the definition that literacy is the ability to use information in daily activities to achieve goals. In contrast, illiteracy is associated with shame, pity, and helplessness. Timmons et al. (2007) explain that the definition of literacy has expanded over time from models of reading and writing to skills of "multiliteracies" in areas such as math, technology, communications and new media.

Statistics Canada and HRSDC (2007) in their report on the Canadian results of the International Adult Literacy Skills Survey (IALSS) explain the survey's four domains of literacy – prose, document, numeracy and problem solving:

Prose Literacy – the knowledge and skills needed to understand and use information from texts including

editorials, news stories, brochures and instructional manuals.

Document Literacy – the knowledge and skills required to locate and use information contained in various formats, including job applications, payroll forms, transportation schedules, maps, tables and charts.

Numeracy – the knowledge and skills required to effectively manage the mathematical demands of diverse situations.

Problem Solving – the knowledge and skills for goal-directed thinking and action in situations for which no routine solutions exist. (Statistics Canada and HRSDC, 2007).

The prose, document and numeracy domains have five levels of increasing difficulty while problem solving has four. See Appendix A for an explanation of the skill levels within each domain. In all domains, Level 3 is the acceptable level for an individual to function in today's economy and a knowledge-based society.

Several authors in the literacy field identify different kinds of literacy, including: family, intergenerational, emergent, natural, workplace, and adult literacy (CRDE, 2000; Perry, 2003a; Timmons et al., 2007).

According to the Centre de recherche et de développement en éducation (CRDE) (2000) the acquisition of family literacy skills involves community and government literacy activities. These encourage reading and writing skills in preschool aged children both in and out of the home that target children and/or parents. Family literacy is about how families use literacy in daily life. There is an intergenerational component that includes parenting skills, reading to children, writing notes to seniors, making shopping lists, using recipes, or planning budgets (Perry, 2003a; Timmons et al., 2007).

According to CRDE (2000), intergenerational, emergent, and natural literacy theories are related to family literacy. Intergenerational literacy includes adults and children in the community as a whole, regardless of their relationship. Emergent literacy derives from the principle that the literacy process of an individual begins before formal instruction. Emergent literacy also argues that listening, speaking, and reading and writing skills develop together. The natural literacy theory claims that there is a natural dimension in children's learning processes. The child's learning environment, including the literacy levels of the adults around him, plays a significant role in shaping the learning process.

Perry (2003a) says that workplace literacy refers to the skills that people need at work such as reading, writing, math, critical thinking, and problem-solving. She also talks about adult literacy, which is about helping adults acquire the skills they need in today's knowledge-based economy. Adult literacy programs can involve acquiring skills around personal, home, work, and community based needs.

d. Overview of the Literature

There are many reports explaining the impacts of low literacy on individuals and families. Regardless of where they live, those who are illiterate share many characteristics such as poor health, low income, and low education levels. The causes of poor literacy outcomes are also well documented such as having parents with low literacy, low education levels and a weaker socio-economic background. There are many studies at the national level about the causes and impacts of literacy for individuals and families. These include statistics for New Brunswick, but only at a provincial level. Many studies are concerned with the state of literacy in New Brunswick and across the country but few make connections to the impacts felt at the community level. Many studies compare anglophone literacy levels to francophone levels, but few studies examine impacts specifically in rural areas.

As stated above there are few studies that focused on the impacts of low literacy levels in rural New Brunswick specifically. However, some studies do examine impacts in communities in general. Those include decreased civic engagement, decreased productivity and slower economic growth. Other studies examine how communities can solve their literacy challenges with new programs and approaches but leave out discussion about the impacts of not addressing low literacy, especially in rural communities. Reports acknowledge that there are important impacts on community development but few go into detail. In addition, other studies focus on impacts at the family level but not specifically at the community level. Due to the lack of specific literature on impacts in rural communities, and rural communities in New Brunswick in particular, our literature review provides an overview of related material and extrapolates impacts experienced in other regions to what is likely to be experienced in rural New Brunswick communities with low literacy levels.

e. The State of Literacy in New Brunswick Communities

Before we delve into the literature on impacts of low literacy, it is important to provide some background around the current state of literacy levels in New Brunswick. Statistics Canada and HRSDC (2005) use findings from the *International Adult Literacy and Skills Survey (IALSS) 2003* to examine literacy levels nationally and regionally. As explained in the previous section, the survey involves four literacy domains – prose literacy, document literacy, numeracy, and problem solving. It conceptualizes proficiency in each of the domains along a broad range of abilities that indicate how well adults use information to function in society and the economy, not whether they are literate or illiterate. Level 3 performance is generally chosen as a benchmark because in developed countries, performance above Level 2 is generally associated with a number of positive outcomes such as increased economic success.

In Canada as a whole 48% (about 12 millions Canadians) of our working-age population (16-65) do not have the literacy skills necessary for coping successfully in today's world (Statistics Canada and HRSDC, 2005). In other words, they performed below Level 3.

Proficiency in numeracy is even lower with 55% of the working age population with scores below Level 3.

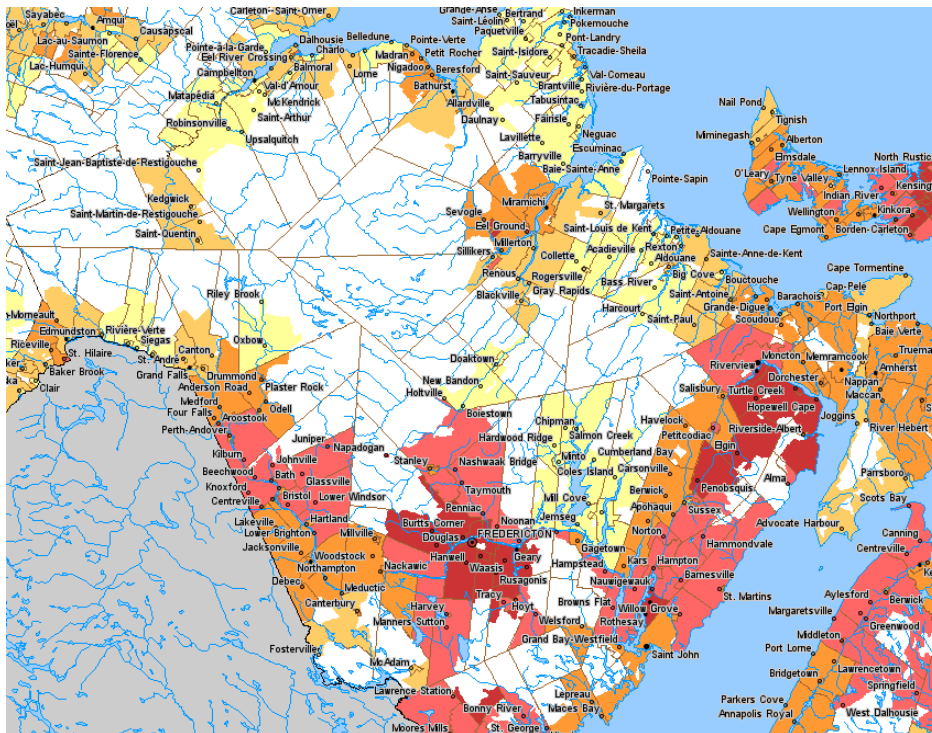
Literacy levels are certainly not uniform across the country. According to Timmons et al. (2007) literacy rates generally decline from west to east. According to Statistics Canada and HRSDC (2005), British Columbia, the Yukon, Alberta and Saskatchewan are above the Canadian averages across all four literacy domains. In contrast, New Brunswick, Newfoundland and Labrador, and Nunavut had average literacy scores significantly lower than the Canadian average. Nova Scotia, the Northwest Territories, Manitoba, Ontario and Prince Edward Island have average scores that are close to the Canadian averages. In Quebec, the average scores for the two literacy domains are below the national averages while for the numeracy and problem solving domains there is no difference.

As stated above, New Brunswick's average literacy, numeracy and problem solving skills are below the national average (Statistics Canada and HRSDC, 2007). In fact, New Brunswickers aged 16-65 had average scores at the high end of Level 2 in document and prose literacy, and just above Level 1 in numeracy and problem solving. Specifically, 50% of the working age population is at Level 1 or 2 in prose and document literacy, while 60% and 80% are in these levels for numeracy and problem solving respectively. Over 90% of seniors (65 and over) scored in general below Level 3, but more than 60% of young people (less than 16 years old) scored at Level 3 or higher (Literacy Coalition of New Brunswick, 2003). These statistics reveal that a large percentage of New Brunswick working age residents are at risk of not being able to fully reach their social and economic potential (Statistics Canada and HRSDC, 2005).

New Brunswick ranks third in average scores in all four domains in Atlantic Canada, only ahead of Newfoundland and Labrador (Statistics Canada and HRSDC, 2007). In other words, New Brunswick has the greatest percentage of its population at Levels 1 and 2 compared to the three other Atlantic Provinces. Within New Brunswick there is little difference between men's and women's scores; however, the average prose literacy scores of francophones (those with French as their mother tongue) are significantly lower than anglophones (Statistics Canada and HRSDC, 2007). According to Brink (2006), 66% of francophones have a literacy level below Level 3. Comparisons were not made between rural and urban New Brunswickers in the IALSS (Statistics Canada and HRSDC, 2007).

Figure 1 provides a map showing the results of the IALSS in New Brunswick at the census subdivision level (including municipalities – city, town, village – and “parishes” or local service districts). The lowest and second lowest level performers are found around Grand Lake in Queens and Sunbury Counties; in francophone coastal villages in northern Kent County and the Acadian Peninsula; and in northern regions of the province. With the exception of the Grand Lake area, all are predominantly francophone areas. In contrast, the areas home to the highest level performers are in and around Moncton and Fredericton. It is also important to note that much of the remote interior of the province is too sparsely populated for data to be available.

Figure 1 – Literacy Performance of New Brunswickers aged 16 to 65 on the 2003 Adult Literacy Skills Survey



- Lowest Performers
- Second Lowest Performers
- Middle Performers
- Second Highest Performers
- Highest Performers
- Non-ecumene
- Population (sparsely populated area)
- No Data

Source: Natural Resources Canada (2006)

Digging further into linguistic differences in the province, we find that the percentage of New Brunswick individuals with only an elementary level of education (grade 8 or less) is twice as high (25.7% versus 11.7%) among those whose first official language spoken is French (Adam, 2001). Francophone individuals tend to have lower literacy levels as compared to Anglophones in New Brunswick, perhaps resulting in some communities experiencing higher unemployment levels and lower than average incomes (Adam, 2001). Beaudin and Béland (2007) claim that previous research assumed that disparities between francophone and anglophone incomes were due not to language, but to regional differences due to distance from urban centers. The majority of Acadian communities in

the province are in the north and east, farther away from the larger urban centres of Fredericton, Saint John and Moncton. These linguistic differences are not unique to New Brunswick. Francophones have lower average literacy scores than their anglophone counterparts in Quebec, Ontario and Manitoba (Statistics Canada and HRSDC, 2005).

f. Impacts on People

Now that the state of literacy levels in New Brunswick is clearly understood, what impacts are low levels having on specific populations? This section examines the literature on children, families, youth, adults and seniors.

i. Children and Families

Low literacy levels among parents have detrimental impacts on their children (Perry, 2003b; CRDE, 2000; Rubin, 2004; Timmons et al., 2000). Parental involvement and commitment play an important role in developing literacy skills in children. CRDE (2000) suggests that the home has the greatest impact on academic performance. The authors go on to say it has been shown that the first years of life are crucial for the development of literacy. They adhere to a theory that five factors influence the impact of the family on the child's literacy skill development:

1. the educational environment created within the home;
2. the creation of learning opportunities;
3. the educational level of the parent(s);
4. the parental aspirations for the child; and
5. direct instruction by the parent(s).

According to Perry (2003b), low literacy makes it difficult for parents to access parenting information and to help their children with school. In other words, low literacy often breeds low literacy and generational cycles continue. Parents need to provide literacy building activities at home to support and enhance what is learned in a formal school environment (Perry, 2003b).

Children of low literacy parents are often in disadvantaged families with poor health and/or unemployed parents. These children may exhibit anti-social behaviour. Children from low-income homes are destined for low achievement since it is felt that their home environments do not provide the types of literacy enhancing experiences, values and attitudes that are important for school success. However, there is hope because when adults improve their literacy and enhance their skills, they transfer knowledge and skills to their family members at home (Rubin, 2004).

Parents with higher literacy skills often have greater financial security and can provide a healthier environment to grow up in and to learn in (Perry, 2003b). Parents with more education tend to talk to their children more, and more often. Their children develop larger vocabularies than those whose parents are on social assistance (Rubin, 2004). According to Timmons et al. (2000) family literacy programs work to improve literacy of

multiple generations by having family members participate in coordinated literacy programs together.

One of the few studies that compare rural and urban students in New Brunswick is by CRDE (2000). They surveyed the parents of preschool children in the province and found that more parents who live in urban areas (94.1%) report that they read to their preschool children, compared to those who live in rural areas (88.2%) (CRDE, 2000, 29). The authors also conducted focus groups with literacy volunteers who generally note that people in rural areas have access to fewer services. They sometimes have to travel considerable distances in order to obtain services and access to transportation is a problem for many parents.

ii. Youth

Youth literacy skills, like those of their younger siblings', are tied to that of their parents'. Statistics Canada and HRSDC (2005), who consider youth to be those aged 16 to 25, argue that youth performance is very important because youth have the potential to contribute their knowledge and skills to their communities, their families, and to the labour market. The authors go on to claim that while having a high average level of proficiency among youth is important, it is also important to have an equal spread of competencies among youth living in various regions, and in different socio-economic classes.

Although Statistics Canada and HRSDC (2005) consider 16 to 25 year olds to be youth, other studies consider those in their teens to be in the youth category. For the purposes of this report, we consider youth to be ages 15 to 24. In 2000, approximately 2,600 New Brunswick 15 year old students participated in the Programme for International Student Assessment. These students were tested in reading, mathematics and science. Out of ten provinces, New Brunswick had the lowest average score in reading (Gluszynski, 2007). The study compares anglophone and francophone students in the province. Similar to other studies (Adam, 2001; Brink, 2006), it shows francophone students perform at half a proficiency level below their anglophone counterparts. When urban and rural test scores were compared, there was no significant difference found in the English school districts. However, in the French school districts urban students scored on average 28 points higher than their rural friends. Gluszynski (2007) concluded that francophone rural students were among the groups identified as particularly disadvantaged.

Brown and Greer Langley (2003) looked at what happens to youth after they finish high school. They found that youth graduate with diplomas but from modified or special programs without adequate literacy skills. They then enter adult literacy programs. In some cases they are being counselled to do so by staff at their schools. This situation is not unique to New Brunswick, but is happening across Canada.

Perry (2003b) sheds some light on what it is like to be a child or youth who struggles to read. She says they feel bad about themselves and feeling bad decreases one's ability to learn. Thirty-five percent of children with reading disabilities drop out of school at a rate twice as high as their classmates. Low literacy rates lead to dropping out and then likely

not having much to do. Thus, surveys also show that half of youth and young adults with reading challenges also have criminal records. Some also have substance abuse and psychological challenges which follow them for the rest of their lives (Perry, 2003b).

iii. Adults

Children with low literacy skills who do not get the help they need grow up to be adults with low literacy skills. They are unable to reach their full potential, contribute fully to society or take advantage of the advances and opportunities in the new knowledge economy. Several studies (Orion Marketing Research, 2003; Rubin, 2004) focus on the many barriers that prevent adults from obtaining the literacy skills they need.

Orion Marketing Research (2003) interviewed students of literacy programs as well as literacy service providers in New Brunswick. According to the authors, the biggest challenge to overcome is a feeling of embarrassment and shame. If they live in a small community, they may be reluctant to seek help because they do not want others to know. Some may lack money to pay for babysitters, transportation and other costs associated with training and learning programs. However, if they do make their way into programs and classes, the authors report that participants develop self-esteem and confidence, and they go on to complete their education and find employment. They also are no longer afraid to speak in public, to speak their mind. Needs identified through the study included more programs in local communities (including General Education Diploma (GED) programs), and a central place to find out about programs available. Other suggestions included finding ways to include employers in the solutions. This may include having them pay wages during a one hour literacy session, or providing in house training. Respondents said that there are many different types of programs available so they were able to find something that suited them. However, in one rural community the students said there is no literacy training available at all anymore, and in another community there was a lack of computers.

Rubin (2004) reports on a study by Horsman (1990) that looked at mothers attending literacy upgrading programs in rural Nova Scotia. The study found that many of the women were isolated due to their low literacy. Similar to the findings of Orion Marketing Research (2003), as they improved their literacy skills, they began to find their voice and express their ideas more easily. The author explains that “these women are often silenced through the political process of enforcement of a single literacy spread across the curriculum in school, without regard for ways of supporting and engaging them as learners” (Rubin, 2004).

iv. Seniors

In an aging society, it is important that everyone, including seniors, has a chance to fully contribute to the economy and to their communities (Myers and de Brouker, 2006). They go on to say it is essential that those with lower levels of education have the opportunity to improve their skills, including seniors. The majority of seniors (those 65 years and older) in New Brunswick have low literacy skill levels as discussed earlier. This is

common across Canada where at least two-thirds of seniors in every province are at literacy Level 1 and 2 of the IALSS. Low literacy rates in seniors make it difficult for them to make informed decisions about their health care, housing and financial affairs (Statistics Canada and HRSDC, 2005).

g. Impacts on Social Outcomes for Rural Communities

Statistics Canada and HRSDC (2005) note that it is difficult to quantify the effect of literacy on social outcomes and that it is much easier to see success in economics. However, the impacts of low literacy levels on social community issues is documented by various authors (Statistics Canada and HRSDC, 2005; The Movement for Canadian Literacy, 2005; Perry 2003b; Torjman, 2006). This section discusses impacts on community renewal, health, well being, social exclusion, and community participation.

i. Community Renewal

In recent years there has been growing recognition of the important social components of revitalization. Improved literacy lies at the heart of these efforts (Torjman, 2006). The PEI Literacy Alliance held community meetings across Prince Edward Island (in Summerside, Montague, Charlottetown, and West Prince at Mill River) to ask community members to identify ways they can continue to support the literacy agenda and the new provincial literacy strategy (PEI Literacy Alliance, 2006). In particular, they asked participants what effect low literacy has on their communities. There was a wide variety of answers including employment difficulties (people quitting, high unemployment, workplace accidents, few options), stagnant community economic development (discourages entrepreneurship, education less valued, less ability to compete), social exclusion and low levels of community participation (less socialization, reduced political engagement), negative attitudes and stress (low self esteem, discouraged), greater demands on social and health services (higher risk of poor mental health), residents with fewer skills and the need to attract immigrants to fill highly skilled positions (must bring in skilled workers, difficulty attracting new residents), victimization (may not question things, believe what they are told), it affects future generations (perpetuates cycle of poverty), and increases the crime rate (increase in underground economy and criminal activity) (PEI Literacy Alliance, 2006). Interestingly these answers were expressed in both rural and urban communities.

ii. Health and Well Being

The negative impacts on health due to low literacy levels are well established (Brown & Greer Langley, 2003; Movement for Canadian Literacy, 2005; Torjman, 2006; PHAC, 2002; Gillis and Quigley, 2004; Statistics Canada and HRSDC, 2005; Statistics Canada and HRSDC, 2007; Perry, 2003b). This section explores how literacy and health are closely intertwined.

Respondents to the IALSS who reported poor health also scored lower on the document literacy scale compared with those reporting fair, good or excellent health (Statistics

Canada and HRSDC, 2005). Low literacy also leads to lower paying jobs. Torjman (2006) states that low income individuals are known to have a shorter average lifespan and run a greater risk of illness and disability than those with higher incomes. According to the Public Health Agency of Canada (PHAC) (2002), people with low literacy levels are more likely to smoke, have poorer nutrition and generally do not exercise. In addition, they tend not to use seatbelts or wear bicycle helmets. Brown and Greer Langley (2003), who write about literacy in Nova Scotia, explain that low literacy can lead to missed medical appointments, not being well prepared for procedures, and not being able to read instructions. They go on to say that people with low literacy are more than twice as likely to be hospitalized, and they can cost health care more than 4.5 times the average person.

Perry (2003b) states that low literacy has negative impacts on life expectancy, diseases (e.g., cancer, diabetes, heart disease), and accidents. Low literacy increases health care costs as patients misunderstand health data, misuse medications, or require longer hospital stays. They are more likely to work and live in unsafe or dangerous environments and to suffer the consequences.

Gillis and Quigley (2004) looked at health literacy in rural northeastern Nova Scotia and found many of the same issues as Perry (2003b). Their study examined people whose lives are shaped by limited literacy, as well as the experiences of practitioners working in literacy and health fields in the province. Respondents from rural areas explained that it was sometimes hard living in rural areas because it is difficult to find a job or to get to a learning program. It can also be hard to get to town to buy food or medicine. The authors explain that apart from the direct links (not being able to read prescriptions) there are also indirect links such as the personal and socio-economic challenges that often go with limited literacy such as self-confidence, employment, income, housing, healthy eating, and stress. Gillis and Quigley (2004) also found connections between literacy and broader population and community health challenges in rural areas such as social isolation; lack of transportation; and limited opportunities and/or decreased access to employment, recreation, health care, education, and social support services.

Interestingly, according to PHAC (2002) studies show that providing health information on its own does not bring about a change in health related behaviour, even if presented effectively. It is only one of many strategies that need to be implemented together in order to encourage people to change their lifestyles. Thus, it is more than about not being able to read health information; it is about the lifestyles in general of those with low literacy. Because of low self-esteem and low income, people with low literacy often wait to seek health care until their problem has reached a critical level.

iii. Social Exclusion Versus Community Participation

According to Statistics Canada and HRSDC (2005) it is important to understand the connections between literacy skills and civic participation because it has implications for building strong communities and social institutions. The literature shows a link between literacy and civic engagement (Statistics Canada and HRSDC, 2005; Torjman, 2006;

Brink, 2006; Wright, 2004). Furthermore, low literacy can also lead to criminal activity (Perry, 2003b; Brown and Greer Langley, 2003; Torjman, 2006).

The lack of participation among those with low literacy in community groups, municipal councils, committees, boards, and voting in town elections is connected to social exclusion (Statistics Canada and HRSDC, 2005; Statistics Canada and HRSDC, 2007). Low skill levels lead to low self-esteem, which in turn prevents people from speaking up and participating, and they effectively become excluded from their community. They may feel they have nothing to contribute or they may be too shy to share their opinions or get involved. Statistics Canada and HRSDC (2005) say that literacy and civic participation enhance one another. Literacy may be central to building a socially engaged community, and such a community in turn may be more likely to develop a positive literacy learning environment. In New Brunswick, half of the population at Level 1 and two-thirds of population at Level 2 in the IALSS is engaged in civic activity. Nearly 80% of those at Level 3 and 90% of those at Level 4/5 participate in community groups and/or in volunteer activities. These results are slightly higher in New Brunswick than in Canada as a whole (Statistics Canada and HRSDC, 2007). At the national level in 2003, only 50% of Canadian adults at the lowest level of prose literacy were engaged in civic activities like volunteering and participating in community groups, compared to 80% of those at the highest literacy levels (Canadian Council on Learning, 2007). Despite the higher than average civic involvement in New Brunswick, Wright's (2004) study reveals that New Brunswick has:

- a low level of voter turnout, especially among youth;
- few people seeking municipal and provincial office;
- decreasing numbers of volunteers involved in organizations; and
- few people feeling included in the political process.

This reality presents challenges for broad based participation in community economic development for rural communities in New Brunswick. For example, a recent study on public views of forest management in the province (Nadeau et al., 2007) found that the majority of respondents to a mail survey want to see changes in the current forest management framework involving more public input and participation. In particular, respondents felt the public should be able to act as full and equal partners to resource professionals, and review and comment on management plans. There was a lower preference for the traditional management models such as stakeholder advisory committees. While there is a desire to include the public in forestry management, the fact that there are lower literacy levels in rural communities (especially in those based on traditional primary industries where literacy skills have not been a necessity), not all of the public may have the skills or confidence to participate in the process. This potential lack of engagement by segments of the population may slow much needed changes in the forestry industry in New Brunswick. Furthermore, changes that are made may not reflect the desires of the entire community.

Higher literacy levels are also associated with healthy democracy. According to the Canadian Council of Learning (2007), adult learning builds social cohesion and an

informed and engaged population, both necessary for a healthy democracy. Likewise, Torjman (2006) notes that literacy plays a vital role in ensuring a healthy democracy. It enables people to participate in all spheres of community life. People with lower literacy levels tend to be less optimistic and less able to deal with change. They are also typically less familiar with government programs concerning health care, education and employment. Statistics Canada and HRSDC (2005) claim that literacy leads not only to civic participation but also to developing strong communities ties. According to Lijphart (1997), low voter turnout because of low literacy is a serious problem for a democratic society. Those who do not vote do not get their voices heard. It means unequal turnout that is biased toward the better educated. Unequal turnout spells unequal political influence as well.

Lack of participation and connection to one's community can lead to criminal activity. There are strong links between low literacy and involvement in criminal activity (Torjman, 2006). On average, offenders experience literacy problems, learning disabilities and low education levels at three to four times higher than the general population (Torjman, 2006; Perry, 2003b). Perry (2003b) claims that low literacy plays a role in criminal behavior. She says that these people have fewer chances to have positive roles in their communities. She also claims that studies show that offenders who choose to improve their literacy and education while in prison tend not to re-offend.

h. Impacts on Rural Community Economic Development

Literacy clearly impacts economic development and in particular training, labour and employment, productivity, economic growth and participation in the new knowledge economy (Torjman, 2006; Landal Inc. 2002; Orion Marketing Research, 2003; Statistics and HRSDC, 2005; Saunders, 2007; Timmons et al., 2007). This section explores the connections between literacy and economic outcomes for communities. Interestingly, while literacy may generally impact social outcomes the same in both rural and urban communities, low literacy in rural communities seems to be especially detrimental to community economic development.

i. Training

According to Torjman (2006), a comparison of 14 OECD economies found that investment in human capital, such as education and skills training, was three times as important to economic growth over the long term as investment in physical capital. A country that achieves literacy scores 1% higher than the average ends up, in a steady state, with labour productivity 2.5% higher than other countries and GDP per capita 1.5% higher, on average (Statistics Canada 2004a, 1 in Torjman, 2006).

Literacy and training are undeniably linked. Eighty percent of newly created jobs require at least two years of post-secondary education (Landal Inc. 2002, 4). According to Landal Inc. (2002) there are two categories of learners. First, there are people who want to develop their reading and numeracy skills, without necessarily taking a work-oriented, labour-market integration course, to enhance daily living, health, be better informed, etc.

Second, there are people who undertake academic upgrading programs to obtain a high school diploma in order to integrate themselves into the workforce.

However, for people with low literacy there are many barriers that exist to access training and upgrading. According to Orion Marketing Research (2003), embarrassment and shame, transportation, finances and other responsibilities can get in the way. Those who do break through the challenges can find confidence, self-esteem, and a voice to express their opinions.

Adult learning and raising literacy skills have the potential to significantly improve the economic well being of those with relatively low initial education and skills (Myers and de Brouker (2006). When learning is diffused throughout the less-educated members of the workforce, community, provincial and national prosperity is significantly enhanced.

ii. Labour and Employment

According to the IALSS, proficiency of working age Canadians in literacy, numeracy and problem solving is clearly linked to their labour market outcomes. The average proficiency scores of those employed are higher than those who are either unemployed or not in the labour force (Statistics Canada and HRSDC, 2005).

Low literacy limits one's options for labour and employment. It also limits a community from attracting top employers including those in the new knowledge economy. Rural communities may be the most disadvantaged. According to Timmons et al. (2007), rural communities with a large percentage of seasonal and primary industry related occupations tend to have lower literacy rates, and often rely heavily upon government transfer payments such as employment insurance. Many families have worked in these occupations for many decades and have experienced literacy challenges for generations.

Historically, employers in primary industries did not require high literacy levels from their employees. Myers and de Brouker (2006) explain the presence of a low skills equilibrium. Those with low income jobs also tend to have low skill jobs where the skill requirements have not changed since they began working in their job, and thus no training or upgrading has been needed or offered by their employers. The result is that these workers get trapped in their low skill jobs with little opportunity to advance their literacy levels and other skills. In today's value added world, this does not bode well for rural workers and rural communities. In contrast, highly skilled occupations also tend to change with technological and other advances, thus requiring constant upgrading and retraining.

On top of skill challenges, Canada's labour market is changing. As in other industrialized nations, the labour force is aging. There are fewer people in the younger cohorts as compared to those in retirement so the labour force will grow more slowly than in the past, even with continued high levels of immigration. In this context, it is more important than ever that adult Canadians have the opportunity to improve their skills and knowledge as the economy continues to change rapidly (Saunders, 2007). Growing the labour force means reaching out to those who are currently not participating or who are

excluded because of their current low literacy levels, and working with them to improve their skills leading to their participation.

Similarly, Gilfoy (2007) believes that the functionally illiterate are a “market segment” worth developing. They should complete high school and at least one level of college or university. If this was achieved it would translate into thousands more people (and their families) being highly functional. Some may also become entrepreneurs. The focus has been on immigration but most immigrants leave our region shortly after arrival, so it is equally important to focus on people who are here already and commitment to the area. Everyone – business leaders, community officials, economic developers, teachers, and politicians – needs to work together to achieve a higher education levels. Then, economies across all types of communities will have a greater chance to prosper.

iii. Productivity and Economic Growth

Low literacy impacts not only people’s ability to get training and to obtain employment but it also impacts productivity. Low literacy levels in communities translates into a low skilled workforce and labour force shortages, which in turn influence or contribute to low levels of productivity (Torjman, 2006; Statistics Canada and HRSDC, 2005; Movement for Canadian Literacy, 2005, Saunders, 2007).

According to Torjman (2006), higher literacy levels have been found to contribute to productivity through enhanced performance. According to the author, in an American study of the economic impacts of literacy, ten Chicago-based manufacturing companies provided basic training in English literacy and numeracy to more than 700 employees. The evaluation of six of these companies found that the program had positive impacts on organizational effectiveness, including increased productivity and job performance. Most employees said that the workplace literacy programs had improved their functioning not only at work but also at home and in the community (Stricht, 1999 in Torjman, 2006).

Similarly, literacy improves productivity because in a global economy a highly skilled population is an asset to economic growth (Statistics Canada and HRSDC, 2005). Because of globalization and technological advances, there has been a shift to highly skilled occupations that require higher levels of education. In addition, it is more than just being educated but being able to adapt to constantly changing technologies in the labour market. If employees cannot change with the times, they cannot be productive. As noted earlier, a 1% improvement in literacy levels can result in a 1.5% increase in GDP per capita and a 2.5% improvement in labour productivity.

The sectors with the highest literacy scores across Canada are knowledge intensive such as public administration, defence, education and health, as well as high and medium-high technology manufacturing sector (Statistics Canada and HRSDC, 2005). In New Brunswick the sectors with the lowest literacy scores are also those that tend not to involve much or any writing such as low tech manufacturing, utilities, construction, and primary industries (Statistics Canada and HRSDC, 2007). Many of these are heavily concentrated in rural regions of the province.

iv. The Knowledge Economy and Rural New Brunswick

Rural economies in New Brunswick and across the country are changing. Knowledge sectors are the way of the future and literacy skills are needed to succeed at both the personal and community levels. There has been an ongoing shift away from dependence on natural resources to knowledge sectors such as computers, graphics, research, communications, etc. According to Brown and Greer Langley (2003), technology access (such as high speed Internet, computer-aided design, and so on) in New Brunswick is improving but due to the rural nature of the province and low literacy skills, these technologies are not being fully utilized to achieve productivity gains or to develop export markets.

Literacy is being understood increasingly as essential in a knowledge-based world. Whitehead and Quinlan (2002) review access to education and information technology, and the information literacy needs of the Canadian workforce. They refer to Canada's National Literacy Secretariat which claims that 42% of Canadians aged 16-65 do not have the literacy skills required for full participation in the knowledge economy.

Similarly, Torjman (2006) and Statistics Canada and HRSDC (2005) argue that training and life long learning are more important now than ever before because of the knowledge economy. Basic workplace readiness now involves grasping numeracy, computer and technological literacy, communications skills, and higher-order analytical skills. However, New Brunswickers do not fair that well with information technology skills, even though advancements have been made to provide high speed internet to more than 95% of the province. However, those who do have access to computers have been shown to have higher literacy and reading achievements (Statistics Canada and HRSDC, 2007).

Veenhof et al. (2005) suggest that those who do not use computers face a digital divide that is compounded by a gap in literacy skills. The new gaps created by information technology are accentuating existing gaps. However, Lock Kunz and Tsoukalas (2000) say there are many advantages to using computers and the Internet in adult literacy programs. They contend that computers open new doors to learning and open new doors to employment. But there are barriers for adults with low literacy to use computers such as basic literacy skills.

Rubin (2004) refers to the work of D'Angelo (1982) who suggests that literacy allows for people to develop abstract conceptual thinking skills. This type of critical thinking is fundamental to functioning in a technological society to enable people to problem solve, draw inferences and work out relationships that otherwise would not be possible.

Employment in knowledge fields such as pure science, applied science, engineering and computers grew at more than twice the rate of total employment during the 1990s. Rising educational requirements have created a need for ongoing training and upgrading to ensure that knowledge and skills keep pace with fast-moving changes. Today literacy is more than just knowing how to read, it is about functioning in an ever changing world.

Good literacy skills are needed to access the training that can lead to the kinds of jobs that are needed today (Perry, 2003b).

5. Inventory of Literacy Related Products and Services in New Brunswick

Organizations and individuals contacted to contribute to the inventory yielded a total of 94 entries. Organizations which provide resources but not a direct literacy program or service (such as the Literacy Coalition of N.B. and the National Adult Literacy Database) were not included. In some cases, specific information related to affiliation as well as languages the program or service is offered in were not available. Follow-up contacts were made, but replies were not provided in all cases. Of the 96:

- Eight are programs offered across the province and offer programs/services for young children, youth, adults, and seniors;
- Networks of adult literacy teachers exist across the province, most notably through the Community Academic Services Program (CASP) and Community Adult Learning Program (CALP);
- Family Resource Centres (FRCs) are the primary providers of literacy-related services for young children and their families. Programming offered in FRCs is fairly consistent across the province but depends on funding available at any given time;
- Laubach Literacy Councils exist across the province and depend solely on volunteers to carry out their one-on-one approach;
- Urban areas tend to provide more literacy-related programs and services than rural areas;
- There appears to be a gap in programs/services offered for youth ages 6 – 18, with their literacy-related issues primarily left to the public school system; and
- Further to the findings of the literature review and others, there appears to be fewer programs/services offered in francophone areas than in anglophone areas.

Below is a further breakdown of our findings by age category.

a. For Children

Family Resource Centres (FRCs) are the primary deliverers of programs and services for children ages 0 – 6 and their families. However, FRCs have limited funding and must spend a large part of their time searching for programs which fit within their budgets. This means that programming is often not consistent, with some programs being offered on a sporadic basis. Early intervention programs, which provide in-home services for pre-schoolers and their families in language development and literacy activities, are offered in some locations throughout the province. Some organizations, like Frontier College, offer programs which work with single mothers and young children. Public libraries offer a number of children's programs.

Early intervention programs are also part of the literacy training directed at children. There are a number of Early Intervention Centres in New Brunswick, although most are concentrated in the more urban areas. Early Active Reading and Storytelling (EARS) provides opportunities for adults to become involved in their children's education before they enter school. The Bathurst Family Literacy Network takes a unique approach with its "Freedom to Choose" program – it trains parents to teach their children while at the same time learning to read for themselves.

b. For Youth

Many programs offered across the province are aimed at youth ages 18+, who attend GED or similar programs offered to adults. There are a minimal number of organizations which indicated they deliver programs for young people ages 12 – 18, and few who deliver programs for youth ages 6 – 12. Among those who sponsor programs for that younger age group are: Parkton Family Resource Centre Homework Club in Moncton; Public Library programs; the Learning Disabilities Association of N.B.; and Quality Learning New Brunswick. Family Resource Centres and others offer parenting, life skills, and literacy programs aimed at adolescent mothers and their children. In addition, organizations like Turning Points Youth Parenting Centre (Moncton) offer services to help youth stay in school. Boys and Girls Clubs host programs which may be held after school or in the evenings for youth. The Saint John Learning Exchange provides a quiet space where youth may focus on their homework and/or receive assistance with various subjects.

The gap in programs and services for this age group is seen not only with literacy but with other issues like recreation, community involvement, health care, and so on. Youth ages 6 – 18 have largely been left as the domain of the school system with learning concerns addressed as they arise, but youth with literacy problems often "fall through the cracks." It is a challenge that will have to be considered by governments and organizations if we are to encourage this age group to be a part of lifelong learning and to develop workplace and employability skills.

c. For Adults

There are a number of programs and services offered throughout the province for adults. They range from interaction with small children/parenting skills/life skills to completing high school equivalency to workplace programs and others.

The Department of Post-Secondary Education, Training and Labour provides the Community Adult Learning Program (CALP) through a network of teachers province-wide in both urban and rural areas. The Department also partners with employers and community-based educational agencies to offer the Workplace Essential Skills program. As well, the Community Access Program provides many rural and urban citizens with computer access to online courses ranging from parenting and volunteer training to GED completion. Regional Literacy Coordinators across the province are responsible for

coordinating services in their respective regions. Public libraries also offer various training programs for adults.

The Community Academic Services Program (CASP) Adult Literacy Network offers a number of programs and services to adult learners designed to advance adult education, literacy and lifelong learning in New Brunswick. This network also employs a number of teachers in various locations across the province.

Laubach Literacy Councils in New Brunswick train volunteers to teach adult non-readers on a one-to-one basis. The volunteers are trained to teach adults in need of basic reading skills. There are a number of other organizations which offer GED education, adult literacy programs, and programs like English/French as a second language in a number of locations around the province. Some companies (for example, Maple Leaf Foods, City of Moncton) offer literacy and skills training for their employees and their families.

The Saint John Learning Exchange sponsors three programs which help adults in the workplace – Basic Education Skills Training (BEST), which assists young adults with GED upgrading, self-development skills, pre-employment skills and general upgrading; Learnex, individualized education and training for adults in the workplace on a fee for service basis; and Pathways to Success, which directs the learner to a job, trade, GED, college or university.

d. For Seniors

There are few organizations within the province which provide literacy programs or services specifically to seniors. Typically this kind of support would come through the Department of Health or the Department of Social Development and be directed at seniors already within the system or known through other contact. There are two senior-focused programs delivered by Frontier College in the Fredericton area: Reading with the Elderly; and Reading Buddies (New Horizons for Seniors). These two programs involve reading to seniors rather than working with them to improve their literacy skills.

6. Summary

Literacy, in all its forms, is fundamental to the social and economic well being of New Brunswick residents and the communities they live in. Literacy is crucial for people's health, social networks, and employment. Low literacy has impacts on all ages including children, youth, working age adults and seniors (Table 1).

Table 1 – Impacts of Low Literacy by Population Group

Population Group	Potential Impacts
Children	<ul style="list-style-type: none"> • poor health • anti-social behaviour • destined for low achievement • feel badly about themselves • decreased ability to learn
Youth	<ul style="list-style-type: none"> • poor health • feel badly about themselves • decreased ability to learn • drop out of school • criminal records • tend not to vote • substance abuse • psychological challenges • enter adult literacy programs
Adults	<ul style="list-style-type: none"> • embarrassment and shame • poor health • lower life expectancy • increased chance of accidents • unable to reach their full potential • unable to contribute fully to society • isolation • limited options for employment • unable to benefit from knowledge economy
Seniors	<ul style="list-style-type: none"> • poor health • difficult to make informed health care decisions • difficult to manage their housing and financial affairs • unable to take part in life long learning

Low literacy can be linked to a wide variety of socio-economic problems in both rural and urban communities including poverty, crime, social exclusion, low civic participation, unemployment, low income levels, labour force shortages, low skilled workers, low productivity and slowed economic growth (Table 2).

Table 2 – Impacts of Low Literacy Common to all Communities

Impacts Common to all Communities
<p><i>Social Issues</i></p> <ul style="list-style-type: none">• cycles of poverty• increased crime rate and underground economy• less adaptive abilities• increased social exclusion and low community participation• decreased voter turnout, especially among youth• few people seeking municipal and provincial office• decreased volunteers involved in organizations• few people feeling included in the political process <p><i>Economic Issues</i></p> <ul style="list-style-type: none">• high unemployment levels• low average incomes• lack of entrepreneurship• low skilled workforce• labour force shortages• need to attract immigrants to fill highly skilled positions• stagnant community economic develop• low productivity• slow economic growth• decreased competitiveness

While there were few reports that compared the impacts of low literacy in rural and urban communities, differences are evident (Table 3). As apparent from our inventory of literacy programs, there are fewer such programs in rural communities as compared to urban. Furthermore, there is a reluctance to seek help in rural communities because of not wanting others to know. Low literacy can lead to isolation and social exclusion which might be made worse by the low density of neighbourhoods in rural communities, the distances people must travel to get to town, and the lack of transportation options.

Low literacy seems to be especially detrimental to economic development in rural communities. Many rural communities are focused on a primary or seasonal industry such as agriculture, forestry or fishing, which historically did not require high levels of literacy or technology. Generations have been involved in these types of employment but now that economies are changing and embracing knowledge sectors, many rural communities face labour challenges, are unable to attract new high tech employers, and general slowed economic growth and productivity. Labour challenges are enhanced by the outmigration of youth leaving communities with older unskilled workers.

Table 3 –Low Literacy Issues in Rural and Urban Communities

Rural	Urban
<ul style="list-style-type: none"> • People in rural areas have access to fewer literacy-related and other support services such as employment and health services because they either do not exist or are located far away in urban centres. 	<ul style="list-style-type: none"> • Urban areas tend to provide more literacy-related programs
<ul style="list-style-type: none"> • Reluctance to seek help because of not wanting others to know. 	<ul style="list-style-type: none"> • Easier to be anonymous in a large city.
<ul style="list-style-type: none"> • Low literacy can lead to isolation which may be more severe in rural areas due to distances to town, neighbours, etc. 	<ul style="list-style-type: none"> • Low literacy levels may not be as isolating.
<ul style="list-style-type: none"> • Low literacy levels can have a more intense impact on community development due to the nature of rural economies (generally based on low skilled primary and seasonal industries). Many residents may also rely on government transfer payments for income. 	<ul style="list-style-type: none"> • Urban economies are diversified often including knowledge based industries.
<ul style="list-style-type: none"> • Rural communities may not be able to attract new employers in the knowledge economy due to their aging workforce and lower literacy rates. 	<ul style="list-style-type: none"> • Urban workforces tend to be younger and more diverse.
<ul style="list-style-type: none"> • Technology adoption and use for productivity gains is lagging and underutilized in rural communities. 	<ul style="list-style-type: none"> • Hubs of technology use tend to be in urban centres with higher literacy levels.

New Brunswick faces a number of challenges in increasing its literacy levels, especially in rural communities. Rural regions face additional challenges including fewer services, lack of transportation, and an aging workforce. However, improving literacy levels has the power to improve all aspects of rural communities’ competitiveness including social cohesion, community participation, volunteerism, entrepreneurship, and economic development.

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Appendix – International Adult Literacy Skills Survey Levels

Level 1 (test score for prose, document and numeracy 0 to 225);

prose –locate a single piece of information in a short text containing no distracters.

document –locate information based on a literal match or enter information from personal knowledge.

numeracy – complete simple, one-step, concrete mathematical operation.

problem solving (test score 0 to 250) – make simple inferences stemming from a familiar context; do concrete tasks with a limited scope of reasoning.

Level 2 (test score for prose, document and numeracy 226 to 275) –

prose – locate a single piece of information in text containing several plausible but incorrect pieces of information; compare two or more pieces of information.

document – match several pieces of information in text by making low-level inferences; integrate information from various parts of the document.

numeracy – use basic mathematics; one or two step processes involving whole numbers, percents and fractions or interpret simple graphical representations.

problem solving (test score 251 to 300) – step by step reasoning in a linear process to combine information from different sources.

Level 3 (test score for prose, document and numeracy 276 to 325) –

prose – match information between text and information using low-level inferences; integrate information from text with no organization aids such as headings.

document – integrate multiple pieces of information from one or more documents; use tables or graphs containing information that is irrelevant or inappropriate.

numeracy – use mathematical information to interpret proportions, data and statistics imbedded in relatively simple texts; do a number of processes to solve problems.

problem solving (test score 301 to 350) – determine a sequence of actions or events or construct a solution by taking non-transparent constraints into account; reasoning is non-linear; cope with multi-dimensional or ill-defined goals.

Level 4 (test score for prose, document and numeracy 326 to 375) –

prose – perform multiple-feature matches or integrate or synthesize information from complex or lengthy passages requiring complex inferences.

document – perform multiple-featured matches, integrate information with a greater degree of inferences; numerous but unspecified number of responses.

numeracy – use multiple steps mathematical process requiring more complex reasoning and formulas; offer explanations for answers.

problem solving (test score 351 to 500) – judge completeness, consistency and/or dependency among multiple criteria; explain how the solution was determined; make inferences from entire system of problem solving states.

Level 5 (test score for prose, document and numeracy 376 to 500) –

prose – make high level inferences or use specialized background knowledge; contrast complex information.

document – search through complex displays that contain multiple distracters, to make high-level text-based inferences and use specialized knowledge.

numeracy – understand complex representations and abstract and formal mathematical and statistical ideas; integrate multiple types of mathematical information, draw inferences or generate mathematical justification for answers.

Source: Statistics Canada and Human Resources and Skills Development Canada (HRSDC) (2005). *Building on our competencies: Canadian results of the international adult literacy and skills survey: 2003*. Statistics Canada and HRSDC.