



READINESS TO LEARN IN MINORITY FRANCOPHONE COMMUNITIES

REFERENCE REPORT



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Summary

This report aims to establish a profile of the children, families and communities participating in the Readiness to Learn in Minority Francophone Communities project (Readiness to Learn project), a demonstration project funded by Human Resources and Skills Development Canada (HRSDC). The project tests a preschool child care program¹, whose objective is to develop a child's language skills, knowledge and use of French, awareness of and identification with the francophone culture as well as favor his/her preparation for school and overall development. The program is evaluated using a quasi-experimental research design with non-equivalent comparison groups. The research design comprises three experimental groups: a program group made up of children enrolled in a francophone daycare centre offering the new preschool program; a comparison group consisting of children enrolled at a francophone daycare centre that does not offer the new program; and a comparison group of children who are cared for at home or in an informal family daycare setting. The first comparison group aims to control for the influence of a formal daycare centre on child development, a treatment in itself. The second comparison group controls for the influence of an informal care setting on child development. The project includes two participant cohorts—the first enrolled in 2007 and the second enrolled in 2008.

The analyses presented in this report deal solely with data from the first cohort when children's mean age was three. Data were collected from May to December 2007, before and shortly after the program was implemented. The primary aim of the analyses is to establish the homogeneity of the experimental groups prior to the program's implementation. The causal inference resulting from a quasi-experimental research design is facilitated by the use of pre-intervention measures of the outcomes (i.e. different components of child development) and their associated correlates. These include parents' socio-demographic profile, family processes and community variables. The report also presents results of analyses comparing the socio-demographic and linguistic characteristics of the study participants with those of respondents in a national survey of the francophone minority. These analyses seek to establish the representativeness of study participants compared to francophone populations living in a minority context. The contents of this report are based on several sources of information, including children's initial assessment of their development, parents' baseline survey, community representatives' survey, a census of early child care resources and services using community mapping, and data from the Survey on the Vitality of Official-Language Minorities (SVOLM). Two future reports will respectively present results of impact analyses and the implementation study of the preschool child care program for the first cohort of participants.

CHILDREN'S INITIAL ASSESSMENT

Children were first assessed in October 2007 on five developmental domains, namely: awareness of self and the environment, cognitive skills, language and communication skills,

¹ Officially known as enriched child care services in HRSDC documents, SRDC, in agreement with HRSDC, will henceforth refer to the program as the "preschool child care program".

physical/motor skills, and awareness and involvement in the francophone culture. Analyses were performed to establish the homogeneity of the experimental groups at the outset of the intervention.

Results of analysis of the initial assessment revealed:

- **An effect of the protocol used to determine the testing language on the scores obtained by the children.** It is important to note that the decisional tree (described in detail in Appendix B) favoured administration of the test in French. Consequently, it is quite possible that some children might have done better had their test been administered in English.
- **Relatively low mean scores per domain for all children.** The breakdown of scores by domain illustrates a floor effect, indicating many of the questions were too difficult for the children tested and that the majority of scores fell within the lower portion of the postulated theoretical distribution of scores.
- **Lower scores in the program group compared to the two comparison groups in four of the five domains tested in French.** This result may be an artifact of the testing language. The program group included a greater number of anglophone, allophone and/or bilingual children who were tested in French. Additional analyses showed that these children tended to obtain lower scores in domains affected by the language spoken (e.g., language and communication skills) when their test was administered in French.
- **The necessity to incorporate tools more sensitive to variations in children's language skill** in order to verify the second research hypothesis, i.e. that the program has a positive impact on children's language skills.

PARENT'S BASELINE SURVEY

In the summer and fall of 2007, parents completed a baseline survey designed to establish their socio-demographic and language profile, and to measure factors affecting children's readiness for school. A series of analyses were also performed at the outset of the intervention to establish homogeneity between the experimental groups.

Results of analyses showed:

- Parents' socio-demographic profiles and family processes are generally comparable across the three experimental groups (e.g., level of education, income, official languages known and first language learned by mothers, social capital).
- A language profile more oriented towards English in the program group. For example, there were more: (1) fathers who spoke English only; (2) parents who spoke English only in the home or with their child; and (3) parents using English only for literacy activities.
- Significant differences between experimental groups for two of the three variables related to the francophone identity of the parents being studied. Results of analyses underline that the program group identifies with both language groups (English and

French) while the informal care comparison group mainly identifies with the French language group. The program group's perception of the francophone vitality in the community was lower than the informal care comparison group. However, the experimental groups did not differ in their involvement in the francophone culture.

- No significant difference between experimental groups in the languages used in child care when children were aged 0 to 12 months, or at the baseline survey. However, a larger number of children in the program group, aged 12-36 months, had been exposed to an English child care setting than children in the comparison groups.

REPRESENTATIVENESS OF THE READINESS TO LEARN PROJECT SAMPLE

The external validity of the study results was investigated using a series of analyses designed to determine whether the Readiness to Learn project children were representative of preschool-aged francophone children raised in a francophone minority community. To this end, the socio-economic and language profiles of the Readiness to Learn project children and their family were compared to those of participants to the Survey on the Vitality of Official-Language Minorities (SVOLM) which took place in 2006-2007.

Main results of analyses suggest:

- Readiness to Learn project children are relatively representative of “young francophone minorities” living in the six geographic regions corresponding to the Readiness to Learn project communities;
- Readiness to Learn project children are not representative of “young francophone minorities” in terms of their family's language profile (first language spoken by the child, his/her mother and his/her father, and the first official language spoken);
- The level of generalisation of the Readiness to Learn project findings depends on the proportion of new immigrants in the francophone minority population using daycare services. If this proportion is relatively small, as appears to be the case for the Readiness to Learn project, then the probability that the results be replicated in another francophone minority population are greater. Conversely, should the proportion of new francophone minority immigrants using daycare services be relatively large, then the probability that the Readiness to Learn project results be replicated in another francophone minority population will be smaller.

COMMUNITY REPRESENTATIVES' SURVEY

The community representative survey, conducted between December 2007 to February 2008, aimed to establish the availability of French resources and services, accessibility and barriers to accessing these resources, the quality of these resources, the community profile and finally, the challenges faced by the community with respect to services and resources targeting the early years.

The main themes raised during the interviews were:

- The **lack of services or programs** targeting young francophone children. In several cases, respondents mentioned resources and services for older children but not for early childhood.
- **The language used** for services and programs targeting young children. Respondents perceived that, overall, services and programs are provided in English only, or in both languages, but **never in French only**.
- The **main barriers** to accessing services identified by respondents were lack of awareness or absence of services available in French, followed closely by a lack of qualified French professionals. They also noted that distance plays an important role in accessing community resources.
- A concern that **francophone parents are being assimilated by the anglophone majority**. Respondents stated that parents tend to turn more to English, because it is easier to access community resources or because one member of the couple is anglophone.
- The significant number of **new francophone arrivals** in certain communities. Some of these new arrivals settle in the community for short periods, and then return to their place of origin. The degree of stability in a community's population could explain differences in investments made in the community's well being and, by extension, in the availability of resources for young children and families.

COMMUNITY MAPPING

A series of maps make it possible to link the locations of French resources and services with the proportion of Francophones found in community neighbourhoods. Community mapping also serves to conduct an analysis of the cultural capital (Landry, 1994) of organizations and institutions targeting early childhood in a francophone minority community. It must be noted that only those resources provided in French alone were considered in this analysis. This choice was based on empirical studies showing that access to French-only resources helps to offset the strong influence of the demographic and social weight of English on the daily lives of members of the francophone community. The presence of multiple francophone settings favours the preservation and flourishing of a language and ethno-linguistic identity (Landry, Allard and Devreau, 2007).

The analysis of the cultural capital shows:

- That a very **large majority of full-time daycare services, junior kindergarten and drop-in daycare services** (between 79% and 100%) are provided in French only. The community of Orleans stands apart from the others with 69% of services provided in French only.
- That the majority of or all **literacy activities** is available in French only in five of the six communities. The smallest percentage is found in Cornwall, with 50% of these activities available in French only.

- A wide discrepancy between communities in the provision of **educational resources** in French only. Only communities in New Brunswick provide all of these resources in French only. In other communities, the availability of these resources in French only varies between 40% and 82%.
- That a large percentage of **sports, cultural and recreational activities** are offered in both official languages. In Saint John, all sports and leisure activities are offered in French only. Edmundston only has one activity that is offered in French only. In other communities, between one-quarter and two-thirds of activities are offered in French only.

FUTURE ANALYSES

The results of the first data collection offered interesting considerations for impact analyses. Other than age and gender, we retain the importance of inserting the home language profile in impact analyses of the new preschool child care program on a child's language and identity development and on the child's degree of readiness for French school. Baseline survey analyses revealed that program group fathers were more anglophone than fathers of both comparison groups, who are more francophone. A predominantly anglophone family environment could also be seen within the program group. Having established this, the results of the first EYE-DA assessment point to the presence of lower scores in all of domains assessed, with the exception of motor skills development, among children who do not have French only as their mother tongue. Preliminary analyses show the importance of considering the francophone cultural capital of communities, the perceived francophone vitality in the community and the orientation of parents' identity in predicting the language and identity development of francophone children living in minority communities, as well as their degree of readiness for French school.

1.0 Project summary

1.1 THE ISSUE

Being Francophone is conceptualized as a process that includes learning the French language, constructing a francophone identity and culture, and integrating into a francophone community. While belonging to a language group is a given in a context where the majority of individuals share the same mother tongue, this natural process becomes complicated when an individual is placed in a minority language situation.

In Canada, many francophone families fight to preserve their mother tongue in environments where English is the predominant language. The latest data taken from the 2006 Census indicates that close to 42% of Francophones living outside of Quebec speak English in the home, although French remains a language that is used (Corbeil and Blaser, 2007). As for the language of schooling of young Francophones outside of Quebec, it varies from one community to the next. In New Brunswick, for example, 83% of children with one or two francophone parents attend French school. This is only true for 26% of young Franco-Manitobans (Education quarterly review, 2004).

Francophone children who attend French language schools in French minority communities experience greater difficulties with the school program. For example, young Francophones in minority communities obtain lower results in reading compared to their Canadian counterparts (Bussière, Cartwright et al., 2001; Canadian Council on Learning, 2008). These difficulties are already present in third grade, as evidenced in the results obtained by young Ontario students tested in 2007-2008 on their reading, writing and arithmetic skills (EQAO, 2007-2008). Among the youngest children in elementary schools, kindergarten teachers rated half of the sampled students as having an overall knowledge of French below the provincial norm, using a performance scale established by the Ontario government (Masny, 2006). The limited exposure of these children to the French language, thereby limiting their development of French language skills, would appear to be at the root of these difficulties. According to Bialystok (2006), children with a limited knowledge of the language of instruction used at school are certain to experience difficulties both in the classroom and in their social life.

It is therefore important to quickly come up with solutions that will increase the chances of these young children of being successful at school and integrating into their community. A longitudinal study showed that children in minority communities who grow up in a mainly francophone environment (where French is the main language used in the home and the daycare centre) obtain higher results on the receptive vocabulary test (as measured in the Peabody Picture Vocabulary Test (PPVT)), and on the communications and general knowledge scales of the Early Development Instrument (EDI) (Chartier et al., 2008). This trend continues as these children reach third grade. Children raised in a francophone preschool-family environment obtained better results in reading in third grade compared to francophone children raised in an anglophone majority environment. Together, these results suggest that an early intervention with these children, targeting both the family and preschool environment, could positively impact their language development and by extension, their academic success. It is from these findings that the research question investigated in the Readiness to Learn in Minority Francophone Communities project originates.

1.2 RESEARCH QUESTION

The purpose of this study is to answer the following research question: All things being equal, does the new preschool program, which includes a daycare component and a parent-child workshop component, have a significant impact on children's language skills, francophone cultural identity and school readiness? Additional research questions are also addressed: Who benefits the most from this program? Is this program cost effective? Can the new program be replicated? What factors explain its success?

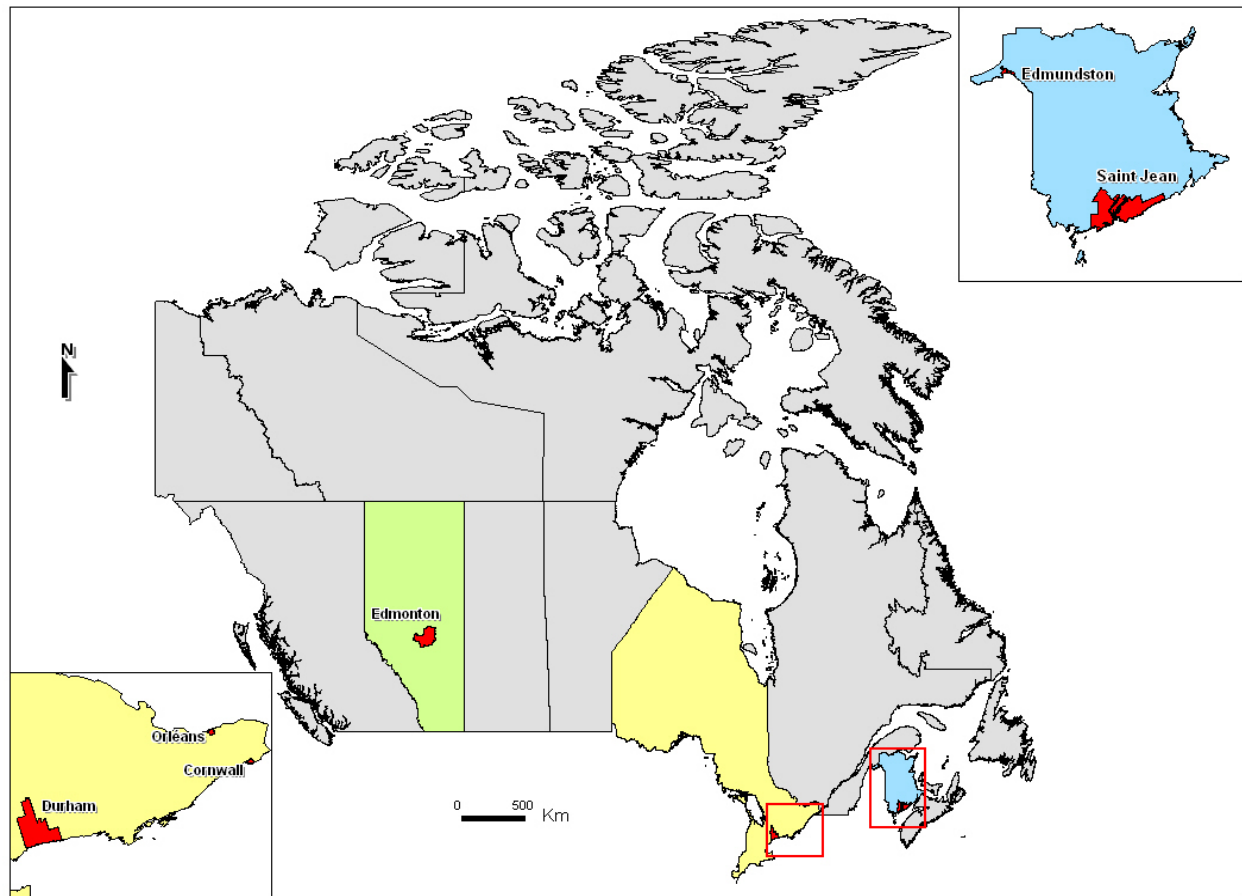
1.3 READINESS TO LEARN IN MINORITY FRANCOPHONE COMMUNITIES PROJECT (READINESS TO LEARN PROJECT)

The Readiness to Learn project tests a preschool child care program², the objective of which is to increase a child's language skills, knowledge and use of French, awareness of and identification with the francophone culture as well as favour his/her preparation for school and overall development. The project seeks to determine the benefits of this preschool program for minority francophone children compared to other groups of children who are not exposed to the program. The program was implemented in two waves. A first cohort began the program in the fall of 2007 in six francophone minority communities (Saint John and Edmundston, New Brunswick; Orleans, Cornwall and Durham, Ontario; and Edmonton, Alberta). A second cohort was recruited in the fall of 2008 in two communities (Orleans and Cornwall) (Figure 1.1 shows the location of the six communities at the national level). Among the children enrolled in the program, some were exposed to it for a period of 12 months while others were exposed to it for a period of 24 months.³ Children's development will be measured until 2011 for the first cohort and until 2012 for the second cohort.

² Officially known as enriched child care services in HRSDC documents, SRDC, in agreement with HRSDC, will henceforth refer to the program as the "preschool child care program".

³ The program will be tracked full-time, for the first 12 months only, for children in Durham and Orleans, where kindergarten services are free for children aged 4. The program will be tracked full-time the first year and part-time the second year for children in Cornwall. It will be tracked full-time, for 24 months, for the communities of Edmonton, Edmundston and Saint John.

Figure 1.1: Location of the six participating communities, by geographical boundary, Statistics Canada, 2006



The new preschool child care program has two components: one focused on the child or on “the daycare centre”, and one focused on the family. The child component includes child care services and French language material that promote children’s development of French language skills, French school readiness, knowledge of the francophone culture and sense of belonging to the francophone community. These services were adapted from the *Programme des pr maternelles fransaskoises* (for children aged 4) developed by the Saskatchewan Ministry of Learning. The family component consists of a series of 10 weekly parent-child workshops, facilitated by literacy practitioners. The family component of the program was developed specifically for the Readiness to Learn project by  duk. It is based on the best practices in family literacy issued by the Centre for Family Literacy. Its content is inspired from the well-known programs of *Literacy and Parenting Skills (LAPS)*, *Chansons, contes et comptines*, *Grandir avec les livres* and *Learning Together*. These “family workshops” are an opportunity for parents to better understand the challenges involved in children’s development in a linguistic minority context, to better support their child’s learning process, and to become aware of the resources and services offered to francophone families in their community. This component also includes some of the daycare program elements to ensure there is cohesion in the approach, values and objectives endorsed by both components, and to reinforce children’s learning.

The preschool program as a whole is based on an integrative perspective and attempts, through different channels, to affect key sources of influence on children's development. The following sections describe the challenges faced by preschool-aged children growing up in a linguistic minority community, then focus on the different sources of influence on early childhood development.

1.4 COMPONENTS IN THE DEVELOPMENT OF CHILDREN LIVING IN MINORITY COMMUNITIES

1.4.1 School readiness or factors contributing to academic achievement

Like all school-aged children, young Francophones in minority communities must be prepared to start school. This transition is important as underlined by studies conducted in this area. There is, in fact, a strong connection between school readiness and academic success (Lemelin and Boivin, 2007). Some indicators can predict a child's disposition to learn at school as early as age three (Thomas, 2006).

The expression "school readiness" is a multidimensional concept. According to Doherty (1997, p. 25), it mainly refers to a child's ability to handle the tasks assigned at school, such as remaining seated and assimilating material. It also includes components that must be put in place between birth and the age of six in order to ensure, not only a successful education, but also "success in all aspects of adult life, particularly in the labour market..." Five dimensions of school readiness are common to a body of research (Meisels & Atkins-Burnett, 2006):

- 1) physical well being and age-appropriate development of motor skills;
- 2) emotional health and a positive approach to new experiences;
- 3) age-appropriate social knowledge and skills;
- 4) age-appropriate language skills; and
- 5) age-appropriate general knowledge and cognitive skills.

While points 1, 4 and 5 are dimensions generally associated with the successful completion of tasks required to succeed in school, points 2 and 3 also help to predict a child's chances of success. Children's ability to control their emotions and their general attitude in class (for example, being able to sit quietly all day long or being curious about what is being taught), along with their social skills, are all key elements of academic achievement. The *National Education Goals Panel* (Meisels and Atkins-Burnett, 2006) recognizes that these five dimensions cannot be separated from family, school, and community and that school readiness must be examined in relation to these sources of influence.

1.4.2 Linguistic and cultural aspect: a particular component for this group of children

Within the context of the Readiness to Learn project, language and identity dimensions are more important than in other studies on child development. In this case, children must get ready to attend school *in French*. Their mastery level of the French language will impact their success later (Chartier et al., 2008). These children are exposed to two different cultures at a time when

they are defining their self-identity. In fact, the majority of children participating in the Readiness to Learn project are from exogamous families; all are growing up in a context where the culture in the home is different from that shared by the majority of individuals outside of the home. The first studies into the importance of culture on child development were conducted by Vygotsky (1978). The culture in which a child is raised will influence the development of his/her language skills and overall ability to learn, via the integration of social symbols to which the child is exposed. Hence, the social environment in which a child is raised is necessarily incidental to the child's construction of a cultural and linguistic identity and his/her overall development.

1.4.3 Developmental trajectory

Evaluating an intervention that is targeted at factors known to influence the course of child development provides a unique opportunity to test a theoretical model. By following the developmental trajectory of the children who participated in the intervention, it is possible to demonstrate that the manipulation of certain causal factors can have a direct and long term influence on child development and thereby constitutes a more solid theoretical test than correlational evidence (Lacourse et al., 2002).

From a statistical viewpoint, developmental trajectories are clear demonstrations of individual change, contrary to repeated measures that consider the evolution of the group. They are also flexible, which means that individuals do not have to be measured simultaneously or have an equal number of assessments. The use of trajectories is possible even when, for example, data are missing (Dupéré et al., 2007). According to Curran and Willoughby (2003), the trajectory of individual development is a latent continuous process that can be mapped on a graph and whose approximation can be obtained by taking several points in time. The curve is presented as a function of time in abscissa, and may take the form of a linear or quadratic association.

By means of developmental trajectories, we will be able to test the hypothesis that *the new preschool child care program, with its two components, has a significant impact on children's language skills, francophone cultural identity and school readiness beyond the development that would take place in the absence of such a program and independently of other external factors that may come into play.*

In order to track the school readiness of children living in francophone minority communities and the effects of the Readiness to Learn project, we must first identify the key variables affecting the development of these children and determine which variables will interact with the program to influence outcomes.

1.5 SOURCES OF INFLUENCE ON CHILD DEVELOPMENT

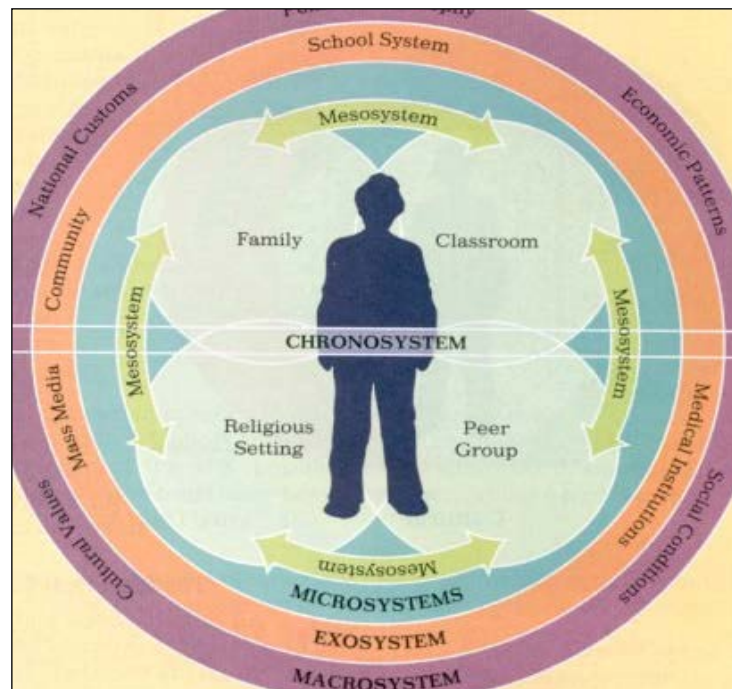
The Readiness to Learn project is based on an ecological vision in which factors at different levels influence child development. This vision is clearly depicted in Bronfenbrenner's ecological model (1979). He was the first researcher to put into words and images the entire system of influences that affect child development. His model is based on three premises: 1) the child is at the centre of the model; 2) the model is built around the child's experiences (which are considered to be engines of development); and 3) this type of model considers the connections

between the child's different environments. The Bronfenbrenner model has five systems (Figure 1.2):

- **Microsystem:** Immediate surroundings (family, school, daycare program, peers, neighbourhood).
- **Mesosystem:** Interactions between immediate environments (e.g., between home and school).
- **Exosystem:** External environment that indirectly affects the child (such as parents' jobs).
- **Macrosystem:** Larger cultural context (e.g. Western culture vs Eastern culture, national economy, political culture, sub-culture).
- **Chronosystem:** Structure of events affecting the environment and transitions over a lifetime.

Within the context of the Readiness to Learn project, where the focus is on young children in linguistic minority communities, three of the systems in the Bronfenbrenner model are particularly important. First, the microsystem, via family characteristics and the child care setting characteristics, influences child development. For family characteristics, we distinguish between contextual variables from family processes (this division is based on the NLSCY, Statistics Canada, 2006a). Contextual variables are “factual” data that are known to be important for children's development (e.g. the family composition). Next is the mesosystem, encompassing ties between the family and the child care setting that also play a role in early childhood development. Finally, the macrosystem—the community in which the child is raised and particularly its linguistic characteristics —is a relevant source of influence for this project.

Figure 1.2: Bronfenbrenner's complete ecological system (1979)



Source: In UW-Extension ABC Project, Appendix B (November 2004), loose translation.

1.5.1 Microsystem: family environment (contextual variables)

Child development is affected by many factors intrinsic to the child, such as the child's fetal history and birth weight, and the duration of the pregnancy. In addition to the inherent characteristics of a child, research has identified over the years a series of environmental factors that may affect a child's development. The contextual variables of the family environment are among the factors that contribute most strongly to a child's development (Sanders and Morawska, 2006). These include the family composition, family income, parents' level of education, and the languages used in the home.

Family composition

In the Readiness to Learn project context, our focus is on the family variables that influence child development, particularly those having an influence on the child's language development. Therefore, birth order is an important variable. Studies show that, on average, first born children have a larger vocabulary than their siblings (Tamis-LeMonda and Rodriguez, 2008).

Family type (two-parent, single-parent, blended, etc.) is also a variable to consider. A study conducted using NLSCY longitudinal data showed that the type of family (two-parent or single-parent) had a direct influence on several aspects of child development. Among children aged six to eleven, the authors concluded that *“Two-parent households [...] had children who were less hyperactive, more academically skilled, less anxious or depressed, and (judged by teachers) good in academic standing.”* (Adams and Ryan, 2000, p. iii). However, it is not so much the family composition as the factors associated with being a single parent, such as maternal stress or the drop in family income, that affect the child *a priori*, hence the importance of interpreting results with caution.

Gross family income

Hundreds of studies have demonstrated a relationship between poverty and a child's health, academic achievement and behaviour. However, few of these studies have examined the effects of the timing, length and degree of poverty. It is easy to see the numerous ways in which an insufficient family income might affect child development: insufficient nutrition, reduction in learning situations, instability in the family home, schools with less resources, family violence, etc. (see Duncan and Brooks-Gunn, 1997). Some studies, such as one done by Berger and colleagues (2005), confirmed the hypothesis that low income influences the outcome of child development through its multiple effects on the home environment. Though the causal relationship between low income and child outcomes (intellectual and behavioural) is quite clear, the interpretation of their connection remains a subject of debate, along with the political implications.⁴ Recent studies on the subject tend to show two main ‘‘routes’’ by which low income could potentially affect a child: the physical environment and the quality of parenting practices (Berger, Paxson and Waldfogel, 2005).⁵ In other words, poverty affects the purchase of material assets for the family in addition to affecting the family stress level, which in turn, influence child development. Many studies based on national data have shown that the level of

⁴ For example, direct cash transfers to families would be sufficient if there was a causal relationship between income, the quality of a child's environment and the outcomes (Berger et al., 2005).

⁵ The first theory was initially developed in economic literature (e.g. see Becker, 1993) and the second one within the context of developmental psychology (Dearing et al., 2006).

cognitive stimulation introduced in the home environment (as measured by learning material and parenting practices related to learning) explains between 33 to 50% of the association between income and different child outcomes on cognitive and language development (Dearing, Berry and Zaslow, 2006).

Studies also tend to demonstrate that the harmful effects of poverty on a child's cognitive development and academic success are greater during the preschool period than at any other time (Dearing et al., 2006). This finding is therefore important to consider when assessing the Readiness to Learn project impacts.

Parents' level of education

Like family income, parents' level of education is an important factor in a child's success (e.g. see Haveman and Wolfe, 1995). Unfortunately, the mechanism through which parents' education influences child development has been less studied. Klebanov and colleagues (1994) demonstrated that a mother's level of education and family income are important factors in developing a physical environment favoring learning, however only education is an important factor for warm parenting practices. A series of studies by Davis-Kean (2005) concluded that parents' education influences child development not only through the social success of the parents, but also through their beliefs and their behaviours toward their child. We can therefore see that parents' level of education is important to child development above and beyond the socio-economic context to which it is often associated.

Mother's age when the first child is born

The mother's age when her first child is born is another factor that has multiple effects on child development. Studies show that a mother's age when her first child is born impacts on the development of the first child as well as all subsequent children after controlling for parenting practices and family functioning (Tremblay et al., 2004). Of particular interest for our study, we must bear in mind that very young mothers provide their child with less complex language stimulation. They use a vocabulary that is less rich and verbally stimulate their children less (Tamis-LeMonda and Rodriguez, 2008). This behaviour impacts the child, whose language development may be insufficient to ensure successful school performance.

Language(s) spoken in the home

It is important to be aware of a child's linguistic environment since it influences the child's academic success (Chartier et al., 2008). This information can be obtained through knowledge of the languages spoken in the child's environment, particularly by the child's parents, older siblings and friends, both in the home and outside of the home. It will then be possible to create an overall profile of the linguistic influences the child is exposed to.

1.5.2 Microsystem: family environment (family processes)

In addition to the descriptive characteristics of families, family processes have a definite influence on child development. The mother's mental health, social support network, family functioning, parenting practices, and family's literacy activities are all elements that interact with child development.

Mother's mental health

Parents' mental health has a huge influence on family functioning and on the overall development of their children (Ryan and Adams, 1998). A mother's level of depression has a strong impact on child development, whether the child is a newborn baby, a preschooler or of school age. A mother's depression during a child's early years causes behavioural and cognitive problems. Children growing up in this context develop less autonomy and interact less with those around them. We also observed that these children have fewer play periods and are less creative in their play (Bernard-Bonin, 2004). This is therefore an important factor that influences a child's developmental trajectory.

Social support network

Social support has long been studied as an element positively contributing to a family's quality of life and having an impact on child development. Landry (2008) speaks of the buffer effect of social support, which mitigates the negative effects of personal and social stressors. In most studies, social support is defined along three axes: emotional support, instrumental support (the perception of reliable people one can go to and tangible assistance) and informational support (provision of advice or information) (Legault, 1995). A mother's ability to obtain social support has important indirect consequences on child development. A lack of social support is linked to an increased risk of poverty and by extension, to problems in children's development (Evans, 2004). Social support even has an influence on a child's physical health. Children in less fortunate families tend to have more illnesses when their family receives little social support (Séguin et al., 2007). These important short and long term repercussions justify the inclusion of this factor in studies on child development.

Family functioning

Beyond a mother's psychosocial difficulties, the overall household environment is also an element that a researcher should consider in relation to child development. Family functioning is defined as the quality of family relationships, in terms of both the quality of communications, and the understanding that family support is available. From a social standpoint, family functioning is highly associated with aggressive developmental trajectories in children (Tremblay et al., 2004). With respect to language development, a child's ability to acquire vocabulary is associated to family functioning—how well the family members get along and communicate with each other (Desrosiers and Ducharme, 2006). Family functioning therefore has many significant impacts over the course of a child's life.

Parenting practices

As the child's first educators, parents play a key role in their child's development and ability to function. Parenting style will influence a child's social, intellectual, moral and emotional development (Bornstein and Bornstein, 2007). Parenting styles have two components: *sensitivity* which measures to what degree the parent listens to the child and is able to respond to the child's needs and interests; and *control* (or *demandingness*) which refers to the degree of supervision and discipline, and the degree to which the parent demands from the child obedience and self-control (Canadian Council on Learning, 2007). Studies on the subject indicate that children display better language skills and have higher IQ test scores when their parents are more encouraging and less controlling (Sanders and Morawska, 2006). It is therefore important to

measure these two components when it comes to tracking a child's language and cognitive development.

Literacy activities

Experiences acquired during early childhood affect a child's language skills upon school entry (Doherty, 1997). According to Desrosiers and Ducharme (2006), children who were read to regularly are less likely to show vocabulary delays. Reading in the home at an early age (before the age of three and a half) is even associated with improved verbal capacity in children who demonstrated language problems. Likewise, parental involvement in learning activities in the home is predictive of a child's social adjustment and adaptation to school in the long term (Izzo et al., 1999). As Ginsburg (2007) reminds us, during early childhood, free play offers a unique learning opportunity for children and helps to prepare them for school life. Parents play an important role in structuring a time and place for free play. Participating in their child's games also provides parents with an opportunity to follow the child's development and to solidify their emotional bond with their child.

1.5.3 Microsystem: child care setting

The characteristics of the child care setting influence child development in numerous ways. For several years, psychologists and educators have concluded, based on their observations and experiences, that non-parental care also impacts on a child's cognitive and language development (Duncan, 2005). To be more precise, the quality of a child care setting affects children's cognitive and language development, their school readiness and their behaviour (Cleverland et al., 2006). Moreover, this impact varies greatly depending on certain family factors. For example, the effects of a high quality child care environment are more noticeable on children growing up in a less fortunate socio-economic context (Burchinal et al., 2000).

A daycare centre can be a place of learning, leading to better academic skills. For example, in studies conducted in the United States, daycare attendance was associated with higher reading and arithmetic scores for five year olds entering kindergarten (also see, for example, Howes et al., 2008). Adequate material, including quality games and books, an appropriate physical environment and affectionate educators who support child development, can be beneficial for all children and more so for children living in a difficult family situation. The quality of child care services can take two forms: structural quality, which includes factors that can be modified through legislation (educator's diploma, working hours, size of the group, etc.) and the quality of processes, determined by the child's experience in the child care environment (quality of activities provided and of the relationship with the educator) (Burchinal et al., 2000). For the purposes of the Readiness to Learn project, this information was gathered through observations. This information will allow comparisons to be made between the daycare component of the tested program and activities offered in the comparison group daycares.

In a francophone minority context, the linguistic aspect is of particular importance in studying the impact of a daycare program. Exposing a preschooler to a French daycare positively impacts on his/her academic success. Chartier and colleagues (2008) demonstrated this fact in a study using longitudinal data from 217 children living in a francophone community in Manitoba.⁶ Children exposed to French in both the family and the daycare environments scored

⁶ The study's name is the "Tots Study", also referred to as the "1997 Manitoba Birth Cohort Study".

higher on the PPVT (which measures receptive vocabulary), and on the EDI communications and general knowledge tests, compared to children who were exposed to French only in the home.

1.5.4 Mesosystem: relationship between the family and the child care setting

The mesosystem consists of the links between the various systems in which the child is placed. These links contribute to child development in a unique manner. Several studies support the idea that the link between the school and the family contributes to child development. Children whose parents are involved in their school life tend to adjust better to school and social situations compared to other children. They also have a more positive attitude toward school and display higher aspirations for their future, regardless of family income and parents' level of education (Connors and Epstein, 1995). The same parallel has been drawn between parents' involvement in a preschool setting and children's pre-literacy skills. Parents who get involved by talking to the educator, asking how their child's day went and participating in child care activities, have children who demonstrate a broader vocabulary, greater phonological awareness and better pre-writing skills (Arnold, Zeljo, Doctoroff and Ortiz, 2008). The program implemented in the daycare centre and family workshops highlights the importance of a close collaboration between parents and educators. Qualitative data will help document this aspect by comparing the openness to include parents in daycare centres where the program was offered to the comparison group daycares.

1.5.5 Macrosystem: community variables

More and more authors acknowledge the important influence of community characteristics on child development (Hertzman and Kohen, 2003; Moore, 2005). A community environment promotes children's cognitive development as well as their physical and emotional health (Willms, 2007). Two key factors have an impact on child development: a neighbourhood's social capital and the availability of resources to families.

Social capital

Social capital refers to “*the networks of social relations that may provide individuals and groups with access to resources and supports*” (Policy Research Initiative, 2005, p. 6). This set of networks contributes to boosting a community's well-being, improving the health of its population and reducing its crime rate, all of which have an influence on child development (OCDE, 2001).

Availability and use of resources

The availability and use of community resources targeting young families in the community is proving to be an important factor on child development. According to Connor and Brink (1999), certain categories of community resources are particularly important for child development, such as health and education systems, entertainment and culture, social programs, special needs programs, and sports and leisure activities. Research shows that children benefit from the use of community resources (Xu, 2008). Community services act as vital supports for children and their families (Hertzman and Kohen, 2003). However, parents are the ones who control children's access to social activities outside of the home, such as play groups, story time at the library, playgrounds, etc. Hence, it has been recognized that the effects of community

characteristics on child development operate indirectly through parents (Kohen, Hertzmen and Brooks-Gunn, 1998).

In the context of a francophone minority community, French services and resources for the early years are seen more as a protective element, ensuring the integration and preservation of the French language (CNPF, 2005). This notion of a protective element is inspired by Breton's (1964) construct of *institutional completeness*. At the extreme end of the continuum, a community with institutional completeness would provide its francophone population with the possibility of conducting all of their daily activities in French. It follows that the presence of French institutions within a community promotes the creation of social networks and increases the social cohesion within the community. Landry (1994) used this notion of a complete institutional infrastructure in his work on the four forms of capital—demographic, political, economic and cultural—that have a tremendous influence on the development, preservation, and even renewal of a community's ethnolinguistic vitality⁷. It is through this ethnolinguistic vitality that minority communities manage to preserve their sense of pride and belonging, contributing to an integration, and not the assimilation, of the francophone language and culture to the majority community. One of these forms of capital—cultural capital—“...refers to the resources and information that act as agents in passing on culture” (Landry, 1994, p. 18, quoted in Guimond, 2003). The author postulates that the assessment of this cultural capital may be achieved through the diversity of educational institutions and access to cultural resources in the community. Landry, Allard and Deveau (2007) stated that French schools – especially the presence of a school system that allows young Francophones to study in French from preschool to high school – play a crucial role in the development, preservation and growth of a complete institutional infrastructure. Within the preschool realm, formal daycare centres, junior kindergarten, family daycare services, extracurricular programs, resource centres and play groups pave the way to schooling in French (Gilbert, 2003).

⁷ See Guimond (2003) for an overview of studies on ethnolinguistic vitality in a minority community.

2.0 Methodology⁸

This section outlines the methodology used for the Readiness to Learn project. It draws on several documents submitted in 2007 to the Technical Authority. The first part describes the Readiness to Learn project participants, the second part presents the experimental design developed by SRDC, and the third part states the hypotheses resulting from the study. Finally, the last part of the document describes the three main measurement tools used in the study.

2.1 PARTICIPANTS

To reiterate, project participants were from francophone minority communities in: Edmonton, Alberta; Cornwall, Orleans and Durham, Ontario; Edmundston and Saint John, New Brunswick. Potential project participants had to meet the following eligibility criteria:

- 1) One of the child's parents had to be an “*ayant droit*” under the terms of the *Canadian Charter of Rights and Freedoms* (section 23), which meant that the child was eligible to attend French school. However, children of immigrants who were not “*ayant droit*”, but whose first official language was French, were admitted unconditionally.
- 2) The children had to be aged between 2 years and 8 months and 3 years and 8 months as of September 1, 2007.
- 3) The parents had to have the **intention** of registering their child in a French school.

The first criterion was established in order to define the target population—in other words, children with access to French school, since the program being tested was designed to increase language skills in preparation for French school. The second criterion was put in place for two reasons: the first is that the measurement tools was adapted to a minimum for children in this age bracket, and the second, children needed to be exposed to the program for as long as possible before beginning school.

The final criterion was in fact seldomly used. In general, the topic of registration was briefly discussed with the parents. SRDC was aware that parents of children that young may not have already chosen a school. However, if the parents said that they had already decided on an English school, then SRDC made a decision not to pursue obtaining informed consent, since the new program is partly designed to better prepare children for French school.

The size of the sample expected by SRDC was established to ensure the ability to detect a medium size effect with a high degree of confidence ($\alpha=0.05$), 19 times out of 20 (Cohen, 1988). For three groups, this number is 165 children, equally distributed between the program group ($n=55$), the formal daycare comparison group ($n=55$) and the informal care comparison group ($n=55$).

⁸ Technical terms are defined in the glossary located in Appendix H.

2.2 EXPERIMENTAL DESIGN

The program is assessed using a quasi-experimental design with non-equivalent control groups. The design includes three experimental groups: a program group made up of children enrolled in a francophone daycare centre that offers the new preschool program; a comparison group of children enrolled in a francophone daycare centre that does not offer the new program; and a comparison group of children who stay at home with a parent or attend a family daycare. The first comparison group controls for the influence of a formal daycare centre on child development; which is in itself a treatment. The second comparison group controls for the influence of an informal care setting on child development. A targeted sampling strategy was used to generate relatively homogenous comparison groups to the program group so as to eliminate the influence on studied outcomes of factors other than those measured. Hence, particular care was taken to target participants with a demographic profile similar to that of the program group (e.g., socio-economic level) and living in the same area, thereby ensuring that they are located near the same francophone resources and services as the program group.⁹

The causal inference resulting from a quasi-experimental design is facilitated by the use of pre-intervention measures of outcomes and their associated factors. Important variables to measure at the outset of the intervention were the study outcomes, children's developmental dimensions, and their correlates. These measures help establish if children in the three experimental groups present a similar pre intervention profile. Likewise, measures of correlates serve to verify which factors associated to child development must be taken into consideration in future analyses. If, for example, significant differences were noted between boys' scores and girls' scores, then gender should be considered in future analyses.

2.3 MEASURES

The three tools used for taking pre-intervention measures were developed by Douglas Willms, University of Fredericton in New Brunswick. The outcome, i.e. the trajectory of child development, is obtained using the EYE-AD. The baseline survey gathered data from parents on the various sources of influence on child development presented in section 1.5. Finally, a first survey was administered to community representatives to gather data on community resources.

2.3.1 Early Years Evaluation – Direct Assessment (EYE-AD)

The *Early Years Evaluation – Direct Assessment* (EYE-AD) was administered to children in the fall of 2007, at the start of the new preschool child care program. The test was then administered every four months for the entire span of the Readiness to Learn project. Children will have taken the test seven times altogether. The trajectory plotted from this series of assessments will help to establish whether the program group children progressed further in their development than the comparison groups children (i.e. whether the average slope of the program group is steeper and/or higher than those of the comparison groups), thereby indicating a potential impact from the new program.

⁹ Readers interested in learning more are invited to read the *Revised Work Plan and Methodology Report* submitted to HRSDC on March 30, 2007.

This instrument is mainly designed to measure school readiness from a multidimensional perspective. The child development dimensions linked to starting school measured by the EYE-AD correspond to those recognized by a consortium of 17 American states (Rhode Island KIDS COUNT, 2005). In addition to measuring recognized child development dimensions, the EYE-AD focuses on assessing cognitive and language development (Willms, 2007). It has five domains, each covering one aspect of child development:

Domain A: Awareness of self and the environment (16 questions)

Domain B: Cognitive skills (17 questions)

Domain C: Language and communication (14 questions)

Domain D: Physical/motor skills (fine and gross motor skills) (16 questions)

Domain E: Awareness and involvement in francophone culture (6 questions)

Each domain has a certain number of questions presented from easiest to most difficult (the item score ranges from 0 to 4 points or from 0 to 3 points). The first four domains are relatively similar to existing tests (an overview of tests that measure school readiness is presented in Appendix A). Domain A, *Awareness of self and the environment*, measures a child's general knowledge; domain B, *Cognitive skills*, measures various concepts such as knowledge of numbers, association and short term memory; domain C, *Language and communication*, measures language skills; and domain D, *Physical/motor skills*, assesses fine motor skills using a booklet provided to the child and assesses gross motor skills (the child must complete different tasks: jump, stand on one foot, etc.). These domains (other than domain D) require the use of test plates or objects that the child can point to or handle. While a test is being given, it is possible to see a child reach a "plateau" in a given domain, when questions become too difficult. Assessment of a domain is stopped when a child obtains a score of 0 or 1 on three consecutive items. The evaluator then moves on to the next domain.

Finally, the administration of domain E, *Awareness and involvement in francophone culture*, has two other objectives: establish a friendly rapport with the child and determine in which language the test should be given.¹⁰ Domain E contains questions on children's preferences with respect to books, television programs and songs, the language of these resources (English or French), and the languages spoken with their parents and friends. This domain also helps to assess the child's level of involvement in the francophone culture and was especially created for the Readiness to Learn project: "...we developed six new items that assess children's knowledge of the beliefs and values, and behaviours and customs that francophone community members share with one another and transmit from one generation to the next." (Willms, 2007, p. 4). The procedure for administering the EYE-AD and the decisional tree used to determine the language of the test are described in detail in Appendix B.

Psychometric properties

The EYE-AD presents good psychometric properties in the analyses performed on the Readiness to Learn project sample. Results of EYE-AD factorial analyses confirmed the

¹⁰ The Peabody Picture Vocabulary Test (PPVT) was initially proposed for determining the testing language, but for the purposes of time and redundancy in the data gathered, this idea was unanimously rejected during a teleconference between Doug Willms and SRDC on November 29, 2006.

unidimensionality of each of the domains in the French version of the test, as theorized.¹¹ The internal consistency (with Cronbach alpha) of each domain proved to be very good, with internal consistency coefficients varying from 0.86 to 0.92 for the French version of the test and from 0.79 to 0.90 for the English version. These internal consistency coefficients correspond to those obtained by Willms (2007) in his study to validate the EYE-AD (see Table 2.1). The reader should note that unlike the other domains, domain E measures both francophone and anglophone aspects. The internal consistency coefficient was only calculated for the francophone aspect.

Table 2.1: Psychometric properties of the EYE-AD sub-scales

<i>Cronbach Alpha</i>	<i>Cronbach Alpha (number of items)</i>	<i>Cronbach Alpha (number of items)</i>
<i>Domains</i>	<i>Willms pilot project</i>	<i>Readiness to Learn project</i>
Awareness and involvement in the francophone culture (E)	0.94 (6)	0.80 (6)
<i>French</i>		
Awareness of self and the environment (A)	0.81 (12)	0.91 (16)
Cognitive skills (B)	0.72 (16)	0.86 (17)
Language and communication (C)	0.87 (12)	0.92 (14)
Physical/motor skills (D)	0.84 (12)	0.90 (16)
<i>English</i>		
Awareness of self and the environment (A)	0.92 (16)	0.87 (16)
Cognitive skills (B)	0.93 (17)	0.79 (17)
Language and communication (C)	0.93 (14)	0.90 (14)
Physical/motor skills (D)	0.97 (16)	0.88 (16)

2.3.2 Baseline survey

The aim of the baseline survey administered to parents in the summer and fall of 2007 was to establish a profile of the children, their families and the environment in which they are growing up. It is being followed by six surveys administered throughout the duration of the project. The baseline survey contains measures of factors relevant to child development within a minority context. The survey incorporates several items from the Survey on the Vitality of Official-Language Minorities (SVOLM) and the NLSCY allowing for comparisons to eventually be made between Readiness to Learn project results to those obtained in these surveys.

Summary of the instrument: measured dimensions

The baseline survey administered to parents comprised six sections: general information; parent-child interactions; social capital and social support; identity; environment and Francophonie; and past child care services. Table 2.2 presents the dimensions measured in the

¹¹ It was impossible to perform a factor analysis on the English version of the test due to the low number of individuals who responded in this language (63 cases under domain C and 44 under the other domains). A minimum of 160-170 cases per domain are desirable in order to ensure the statistical validity of calculations (Tabachnick and Fidell, 2005).

baseline survey, a brief description of each, and the internal consistency coefficient for the Readiness to Learn project sample.

Table 2.2: Summary of the variables measured in the baseline survey

<i>Section of the baseline survey</i>	<i>Components measured</i>	<i>Cronbach alpha</i> <i>Readiness to Learn project</i>	<i>Description</i>
I – General information	Person most knowledgeable (PMK) Spouse	N/A	Socio-demographic factors: <ul style="list-style-type: none"> • Family composition • Level of education • Mother's age when the child was born • Hours worked • Income • Parents' language profile • Number of years lived in the community
II – Parent-child interactions	Positive parenting style Authoritative parenting style Empowerment Language used by the child in the home Literacy activities Languages used during literacy activities	0.62 0.58 0.32 0.95 0.63 0.92	The parent's usual ways of interacting with the child, the language(s) used most often by the child to communicate with people in the environment, types and frequency of literacy activities engaged in with the child
III – Social capital and social support	Social capital Social support Family functioning Depression in the PMK	0.80 0.80 0.82 0.80	Parents' experiences with people living in his/her neighbourhood, social network supporting the parent, indicators of depression
IV – Identity	Identity involvement (6 items) Sense of belonging to linguistic communities	0.67 N/A	Degree of importance attributed: <ul style="list-style-type: none"> • to child's ability to speak French • to the development of the child's francophone identity • to parent's involvement in and commitment to the community • to attending francophone cultural activities Sense of belonging to the francophone and/or anglophone linguistic community, or another linguistic community

<i>Section of the baseline survey</i>	<i>Components measured</i>	<i>Cronbach alpha</i> <i>Readiness to Learn project</i>	<i>Description</i>
V – Environment and Francophonie	Perception of francophone vitality in the community (6 items)	0.90	Use of/access to French services in: <ul style="list-style-type: none"> • business settings • medias • government services • municipal government services • community organizations • workplaces
	Presence of French in the community (2 items)	N/A	Increase or decrease in the presence of French in the past and in the future
VI – Child care	Type of child care	N/A	Main types of child care used during four periods of childhood: <ul style="list-style-type: none"> • 0 to 12 months • 12 to 24 months • 24 to 36 months • from 36 months to when the baseline survey was given
	Languages normally used	N/A	Languages normally used in these child care settings

Modifications were made to the scales suggested by Doug Willms to reduce measurement error. See Appendix C for a description of the scales used in the Readiness to Learn project and their equivalents to the original scales proposed by Doug Willms, the NLSCY scales and those used in the SVOLM.

2.3.3 Community survey

The survey administered to Readiness to Learn project community representatives aims to examine francophone resources currently available in each of the participating communities. It includes five open-ended questions covering specific areas such as the presence of resources and services targeting young francophone families, issues such as access, quality of services provided, and areas to be developed. Community representatives are also asked to describe their francophone community's history, the mobility of its residents and current tensions within the community.

To complement the information obtained from community representatives, two questions were introduced in the February 2008 parent follow-up survey regarding problems accessing francophone services, and the reasons for these problems. This addition will help complete the information by taking into consideration the viewpoints of both parents and community representatives.

2.4 STUDY HYPOTHESES¹²

Recall that this study attempts to answer the following primary research question: “*Does the new preschool child care program, with its two components, have a significant impact on children’s language skills, francophone cultural identity and school readiness beyond the development that would take place in the absence of such a program and independently of other external factors that may come into play?*” Three specific hypotheses ensue from this research question.

Hypothesis 1: The program group children will score significantly higher than their peers in the comparison groups on the dimensions of “Awareness and involvement in francophone culture” and “Language and communication”; however, no significant differences will be observed for “Awareness of self and the environment”, “Cognitive skills” and “Development of physical/motor skills”.¹³

This hypothesis is designed to test the primary research question directly. Moreover, it ensures the external validity of the study since it controls for other conditions in the community that might affect child development.

Hypothesis 2: The program group children will score significantly higher than their peers in the daycare comparison group on the dimensions of “Awareness and involvement in francophone culture” and “Language and communications”; however, no significant differences will be observed for “Awareness of self and the environment”, “Cognitive skills” and “Development of physical/motor skills”.

This comparison helps ensure the internal validity of the study since the children in the formal daycare comparison group have similar environmental conditions to those experienced by the program group children.

Hypothesis 3: The program group children will score significantly higher than their peers in the formal daycare comparison group on the dimensions of “Awareness and involvement in francophone culture” and “Language and communications”; however, no significant differences will be observed for “Awareness of self and the environment”, “Cognitive skills” and “Development of physical/motor skills”. In turn, children in the formal daycare comparison group will score significantly higher than their peers in the informal care comparison group on the dimensions of “Awareness and involvement in francophone culture” and “Language and communications”; however, no significant differences will be observed for “Awareness of self and the environment”, “Cognitive skills” and “Development of physical/motor skills”.

This hypothesis simultaneously tests for differences observed between the program group, the formal daycare comparison group and the informal care comparison group, while taking into consideration the characteristics of the community. The community environment plays an important role in child development to the extent that it renders resources (e.g., parks, wading pools, bike paths) and services (e.g., book store, library, swimming lessons, etc.) available.

The next chapters present the results from assessments, parent surveys and community surveys.

¹² Technical terms are defined in the glossary in Appendix H.

¹³ These dimensions are defined in section 2.3.1.

3.0 EYE-AD results

This chapter presents the results of the first wave of the EYE-AD in five sections. The first section gives a general description of the total sample, followed by comparative analyses of the experimental groups. The purpose of these analyses was to verify the homogeneity of the experimental groups with respect to the children's gender, age (in months) and mother tongue. The section also describes the response rate obtained for this sample and the underlying reasons for missing data. The second section of the chapter provides a description of situations encountered in the field during the first wave of assessments.

A third section presents the main analyses on EYE-AD mean scores for the total sample and for each experimental group, which allows us to verify for pre-intervention differences between groups. The fourth section contains comparative analyses conducted to verify whether obtained scores differed as a function of gender, age (measured in months) and mother tongue. The final section shows results of additional analyses indicating differences in mean scores as a function of perceived francophone vitality in the communities studied. At times, SRDC will refer to Willms (2007) for comparison purposes, since it is the only study available using data from the EYE-AD. This chapter ends with a discussion of the results.

It is important to note that caution must be exercised when interpreting the results of some of the comparisons between experimental groups. The greater the number of observations used in calculating a statistic, the closer this statistic is to the true observed value of the population-based parameter. Inversely, when the calculation of a statistic is based on data obtained from a small number of individuals, the greater the probability that the statistic will **not correspond** to the true observed value of the population-based parameter.

3.1 DESCRIPTION OF THE SAMPLE

The total sample of the EYE-AD results includes 317 children, which corresponds to the 320 children enrolled in the Readiness to Learn project¹⁴ during the period when data were collected, minus three children whose parents could not be reached at the time. Data were collected from September 28 to October 10, 2007 for the communities of Cornwall, Durham, Edmonton, Edmundston and Saint John, and from October 22 to November 5, 2007 for the community of Orleans.

3.1.1 Total sample

At the time of testing (n = 317 children):

- 114 children (36.0%) are enrolled in the program group, 109 (34.4%) are in the formal daycare comparison group, and 94 (29.7%) are in the informal care comparison group.

¹⁴ Enrolled as of September 28, 2007, which was the date that testing began. It should be noted that five families completed the baseline survey but withdrew from the Readiness to Learn project before their child could be assessed.

- 148 of the children are boys and 169 are girls.
- The mean age is 38.6 months (standard deviation of 3.8 months), which corresponds to 3 years, 2 months and 2 weeks. The median age is 39 months and ranged from 32 months (2 years and 8 months) to 47 months (3 years and 11 months).
- The sample includes 18 children at the minimum age required to take the test (2 years and 8 months) and 84 children aged less than 3. Recall that the instrument was not validated beforehand with such a large group of young children, which provides a new perspective on the validity of the instrument for this age group.
- The mother tongue of the sample children (according to the most knowledgeable person) is:

○ French	68.6%
○ English	17.7%
○ French and English	9.1%
○ French and another language	1.6%
○ English and another language	0.6%
○ French, English and another language	0.6%
○ Other	1.6%

3.1.2 Sample by experimental group

Preliminary analyses were performed to determine whether the incidence of variables that might affect the dependent variable (EYE-AD score) are comparable in each group.

In Table 3.1, we observe a slightly larger number of girls in two of the three experimental groups. There is no significant difference between experimental groups in terms of the mean age of the children. An examination of the table reveals that the program group (G1) and the formal daycare comparison group (G2) have approximately twice as many children whose mother tongue is English compared to the informal care comparison group (G3). In addition, more than double the number of children in G1 have the two official languages as their mother tongues compared to the other two groups. These differences were significant ($X^2(12) = 24.7, p < 0.05$). In short, the program group (G1) has:

- more bilingual children than G2 and G3
- more anglophone children than G3
- less francophone children than G2 and G3

Table 3.1: Descriptive statistics for variables of interest by experimental group

<i>Experimental groups</i>	<i>Program group (G1)</i>	<i>Formal daycare comparison group(G2)</i>	<i>Informal care comparison group(G3)</i>		<i>Significant differences between groups?</i>
<i>Variables</i>	<i>Number (%)</i>	<i>Number (%)</i>	<i>Number (%)</i>	<i>TOTAL</i>	<i>Chi square</i>
<i>Gender</i>					
Boys	53 (16.7)	48 (15.1)	47 (14.8)	148 (46.7)	No
Girls	61 (19.2)	61 (19.2)	47 (14.8)	169 (53.3)	
TOTAL	114 (36.0)	109 (34.3)	94 (29.7)	317 (100)	
<i>Age</i>					
Average age (in months)	38.3	38.5	38.8	38.6	No
<i>Mother tongue (according to the PMK)¹⁵</i>					
French	63 (28.8)	80 (26.4)	75 (24.8)	218 (72.0)	Yes**
English	24 (7.9)	21 (6.9)	11 (3.6)	56 (18.5)	
French and English	17 (5.6)	6 (2.0)	6 (2.0)	29 (9.6)	
TOTAL	104 (34.3)	107 (35.3)	92 (30.4)	303 (100)	

Note: Significance level: *** $\leq 1\%$; ** $\leq 5\%$.

3.1.3 Response rate and missing data

The response rate for children's assessment can be defined in two ways:

- 1) Parents' response rate (number of parents who took an appointment for the test administration);
- 2) Children's response rate (proportion of children who completed the test, i.e. who wanted to participate).

Parental response rate was 99.4% (317 tests out of 320 children enrolled). Child response rate was 99.1% (314 children out of 317). A completed test is defined as *a test that the child began and answered to the best of his/her abilities at the time the test was given*. Therefore, a child who began the test and then stopped because he/she no longer wanted to participate is considered to have a completed test according to this definition.¹⁶ During the first wave, there were three children who did not want to be tested at all.

However, a distinction must be made between a complete assessment and an incomplete assessment, which results in missing data. Scores were calculated for each of the EYE-AD domains. Hence, a child might have a missing score in one domain and scores in the other four

¹⁵ Some categories had to be removed since they included less than five cases.

¹⁶ Definitions of a complete or incomplete test vary depending on the study. The definition proposed here is the one adopted by SRDC.

domains measured. In total, there were 14 children with missing data in one or more domains. The missing data can be summarized as follows:

- six children for whom it was impossible to calculate a score for domains A, B and C *in French*;
- seven children for whom it was impossible to calculate a score for domain D *in French*;
- five children for whom it was impossible to calculate a score for domain C *in English* due to an error in applying the protocol. These children should have had a score in this domain according to the decisional tree.

Given the total sample of 317 children who took part in this first assessment, there are very few missing data.

3.2 PROCESS SUMMARY FOR THE FIRST WAVE

The procedure for administering the test involved making an appointment to perform the assessment at the child's home or at the daycare centre. Children attending a daycare centre participating in the Readiness to Learn project generally took the test at the daycare centre. The assessment could also be administered in the home if the child answered in English¹⁷ or at a parent's request. SRDC also provided an opportunity for several attempts at the test if the situation prevented completion in one sitting. In the daycare centre, the established routine sometimes made it difficult to complete the test over the same day. However, wherever possible, attempts were made to complete the test in a single day, with the general rule being to try at least twice with non-cooperative children (except if the assessment was being done in the home). Below are the main points raised in the first wave:

- 275 children (87% of the cases) completed the test in one sitting or in a single day (within a few hours).
- 36 children (11.4%) completed the test in two attempts (two days).
- 6 children (2%) completed the test in three attempts. All these cases were assessments performed at a daycare centre.
- 4 children (1%) did not answer any questions or only a few questions (two of these children had two attempts at the daycare centre and two had one attempt at home).
- 198 assessments (62.5%) took place in a daycare centre.

Evaluators wrote comments in the margin while completing the assessment, to explain some of the results. These comments were very useful in understanding the degree of receptivity of the children at the testing location. In order to distinguish between a score of "0" for a non-response (scoring rule) and a score of "0" assigned for a wrong answer, SRDC asked evaluators to indicate "N/A" (no answer) beside questions children did not answer. This specification helped qualify results. According to the comments *reported*¹⁸ by evaluators:

¹⁷ Some daycare centres have a "no English" policy.

¹⁸ It should be mentioned that this number is definitely underestimated since evaluators did not all systematically write comments.

- 43 assessments (13.8%) contained a non-response to at least one of the sixteen items for domain **A**, in French or English;
- 23 assessments (7.4%) contained a non-response to at least one of the seventeen items for domain **B**, in French or English;
- 61 assessments (16.3%) contained a non-response to at least one of the fourteen items for domain **C**, in French or English;
- 27 assessments (8.7%) contained a non-response to at least one of the sixteen items for domain **D**, in French or English;
- 73 assessments (23%) contained a non-response to at least one of the six items for domain **E**.

We can therefore hypothesize that scores calculated by domain may underestimate children's capabilities. This point is further supported by study results showing that an unfamiliar person (in this case, the evaluator) can influence a child's decision on whether or not to answer a question, even if the answer is known (Atkins-Burnett, 2007).

3.3 GENERAL RESULTS AND RESULTS OF COMPARATIVE ANALYSES

This section begins by presenting data on the language the test was administered in. Although these data cannot be used to determine the program's impact, they do inform on the number of children who have sufficient knowledge of French to take the test in this language. Next, children's mean scores by EYE-AD domains for the total sample and for each experimental group are presented. The section concludes with results of comparative analyses of scores obtained on each domain by experimental group.

3.3.1 Language of test results

In total, it was possible to determine the language in which the assessment was to take place for 313 cases. Recall that it had been impossible to determine the testing language for four children. Below are the main results:

The decisional tree of the protocol¹⁹ used to determine the testing language was or should have been used for 86 of the 317 children (27%):

- 4 (4.7%) stopped before the testing language could be determined;
- 39 (45.3%) took the test in French;
- 43 (50.0%) took the test in English.

For the total sample (n=317), the testing language can be broken down as follows:

- 269 children (84.9%) took the test in French;
- 44 children (13.8%) took the test in English;
- 4 children (1.3%) did not have a definite language.

¹⁹ If a child obtained a score of 6 or less on domain E, the evaluator was required to apply the decisional tree.

We therefore observe a high proportion of children who did the test in French (84.9%). Three explanations ensue from this observation:

- Approximately a fourth (26.2%) of the total sample (317) consists of children from Edmundston ($n = 83$), all of whom were tested in French.
- French is the mother tongue for 218 of the children (68.8%).
- A total of 223 children in the sample (70.3%) attend a French daycare centre, which influences a child's ability to take the test in this language, even if their mother tongue is English.

It will be interesting to see how many children assessed in English will be capable, over time, of being tested in French.

3.3.2 Score analyses for the total sample and by experimental group

Each domain measured in the EYE-AD is represented by a letter as follows:

- domain **A** measures general knowledge, including awareness of self and the environment;
- domain **B** measures cognitive skills;
- domain **C** measures language and communication skills;
- domain **D** measures physical and motor skills;
- domain **E** measures awareness and involvement in the francophone culture.

Children's scores by domain represent the sum of scores obtained for each item included in the domain. Domains A, B and C were calculated using a 4-point scale while domains D and E were calculated using a 3-point scale.

For the test administered in French, Table 3.2 below shows that children had the highest mean score in domain E, followed by domains A, B and C. Results for domain E must, however, be interpreted with caution since the parents, and not the children, answered three of the six questions for the domain. Moreover, domain E indirectly measures the child's level of awareness and involvement in the francophone culture through exposure to French resources and a human French environment. The lowest mean score was in domain D, most likely due to the fact that the child's age is highly correlated to the score for that domain (Willms, 2007). We also observed relatively weak mean scores by domain, given:

- the very young age of the children during this first wave of assessments and the fact that the instrument must discriminate in function of age;
- a score of "0" was assigned to non responses. This observation does not rule out the possibility that a child who does not answer a question does indeed not know the answer. We therefore cannot state with certainty that the mean score is underestimated.

This table also shows that there are differences between the experimental groups for some of the domains in the French test. Post-hoc analyses (Tukey) underline significant differences in the mean scores of experimental groups for most domains (the exception being domain E ($F(2.313) = 1.15, p > 0.05$)) :

- For domain **A** ($F(2.264) = 7.07, p = 0.001$), children in the formal daycare comparison group (G2) scored significantly higher than children in the program group (G1).
- For domain **B** ($F(2.264) = 9.82, p = 0.000$), children in G2 and children in the informal care comparison group (G3) scored significantly higher than children in G1.
- For domain **C** ($F(2.308) = 9.28, p = 0.000$), children in G2 and G3 scored significantly higher than children in G1.
- For domain **D** ($F(2.263) = 12.76, p = 0.000$), children in G2 scored significantly higher than children in G1 and G3.

For the English test, post-hoc analyses did not reveal any significant differences between experimental groups. However, the number of children tested in English is much smaller thereby lowering the statistical power required to detect significant differences.

- For domain **A** ($F(2.41) = 1.08, p > 0.05$)
- For domain **B** ($F(2.41) = 1.57, p > 0.05$)
- For domain **C** ($F(2.60) = 1.31, p > 0.05$)
- For domain **D** ($F(2.41) = 2.00, p > 0.05$)

Table 3.2: Analysis of variance (ANOVA) by domain across experimental groups

<i>Experimental groups</i>	<i>Total sample</i>	<i>Program group (G1)</i>	<i>Formal daycare comparison group (G2)</i>	<i>Informal care comparison group (G3)</i>	<i>Significant differences between groups?</i>
<i>Domains</i>	<i>Mean score (standard deviation) n</i>	<i>Mean score (standard deviation) n</i>	<i>Mean score (standard deviation) n</i>	<i>Mean score (standard deviation) n</i>	<i>Post-hoc</i>
Awareness and involvement in francophone culture (E) (out of 3 points)	1.48 (0.78) n = 316	1.38 (0.81) n = 113	1.47 (0.75) n = 109	1.59 (0.78) n = 94	No
French test					
Awareness of self and the environment (A) (out of 4 points)	1.67 (0.76) n = 267	1.47 (0.61) n = 92	1.88 (0.85) n = 94	1.66 (0.76) n = 81	Yes G1<G2***
Cognitive skills (B) (out of 4 points)	0.85 (0.62) n = 267	0.65 (0.49) n = 92	1.04 (0.70) n = 94	0.87 (0.58) n = 81	Yes G1<G2*** G1<G3**
Language and communication (C) (out of 4 points)	1.29 (0.85) n = 311	1.04 (0.73) n = 112	1.53 (0.86) n = 107	1.32 (0.91) n = 92	Yes G1<G2*** G1<G3**
Physical/motor skills (D) (out of 3 points)	0.47 (0.49) n = 266	0.35 (0.41) n = 92	0.67 (0.56) n = 93	0.39 (0.43) n = 81	Yes G1<G2*** G2>G3***
English test					
Awareness of self and the	1.84 (0.70)	1.72 (0.62)	2.08 (0.75)	1.79 (0.74)	No

<i>Experimental groups</i>	<i>Total sample</i>	<i>Program group (G1)</i>	<i>Formal daycare comparison group (G2)</i>	<i>Informal care comparison group (G3)</i>	<i>Significant differences between groups?</i>
<i>Domains</i>	<i>Mean score (standard deviation) n</i>	<i>Mean score (standard deviation) n</i>	<i>Mean score (standard deviation) n</i>	<i>Mean score (standard deviation) n</i>	<i>Post-hoc</i>
environment (A) (out of 4 points)	n = 44	n = 19	n = 13	n = 12	
Cognitive skills (B) (out of 4 points)	0.96 (0.51) n = 44	0.84 (0.52) n = 19	1.16 (0.53) n = 13	0.94 (0.44) n = 12	No
Physical/motor skills (D) (out of 3 points)	0.35 (0.41) n = 44	0.25 (0.29) n = 19	0.53 (0.44) n = 13	0.31 (0.49) n = 12	No
Language and communication (C) (out of 4 points)	1.35 (0.79) n = 63	1.17 (0.62) n = 28	1.52 (1.01) n = 21	1.42 (0.67) n = 14	No

Note: Significance level: *** $\leq 1\%$; ** $\leq 5\%$.

In sum, the mean score obtained by children in the program group was significantly lower in four of the five domains compared to the mean score obtained by children in the comparison groups. The next section details results of additional analyses performed in an attempt to explain the observed differences between experimental groups.

3.4 ADDITIONAL ANALYSES

Additional analyses performed in this section are doubly useful for subsequent impact analyses. First of all, their purpose is to verify certain associations postulated a priori between the EYE-AD and socio-demographic variables. Hence, a prior assumption was to find differences in the EYE-AD scores as a function of age and gender, comparable to those usually found in early year studies (Janus and Offord, 2007; Willms, 2007). Secondly, it is worthwhile to further investigate the role of certain variables in explaining the differences between experimental groups in the mean score of domains measured by EYE-AD prior to the implementation of the program (see section 3.3.2). Hence, the influences of the child's mother tongue and the perceived francophone vitality in the community on EYE-AD scores are variables of interest to test in the context of the Readiness to Learn project where a large number of children are from exogamous families and grow up in a French minority environment. To the extent that these variables have a significant bearing on the EYE-AD scores, they must be taken into account in future analyses.

3.4.1 Comparison of scores by gender

The possibility of significant differences between boys and girls was examined first (see Table 3.3). Significant differences were observed between boys and girls on the following domains:

- A in the French test [$t(265) = 2.68, p = 0.008$] and in the English test [$t(42) = 2.64, p = 0.012$]

- **B** in the French test [$t(265) = 3.19, p = 0.002$]
- **D** in the French test [$t(264) = 3.65, p = 0.001$]

Scores did not differ between boys and girls on the following domains:

- **B** in the English test [$t(42) = -1.28, p > 0.05$]
- **C** in the French test [$t(309) = 1.04, p > 0.05$] and in the English test [$t(61) = 1.19, p > 0.05$]
- **D** in the English test [$t(42) = 0.50, p > 0.05$]
- **E** [$t(314) = 0.47, p > 0.05$]

In general, these results also appear in other studies.²⁰ It is interesting to note that the domain in which we would have expected a higher score among girls (i.e. domain C, which measures language and communication) did not end up showing any differences between the genders.

For domain E, we did not expect to find any major differences between the two groups since the spoken language (answers given by the parents) is independent of gender. The reader will note that preliminary analyses confirmed the absence of significant differences between boys and girls in terms of age and mother tongue.

Table 3.3: Analysis of variance (ANOVA) as a function of domain and gender

<i>Child's gender</i>	<i>Boys</i>	<i>Girls</i>	<i>Significant differences between boys and girls?</i>
<i>Domains</i>	<i>Mean score (standard deviation) N</i>	<i>Mean score (standard deviation) n</i>	<i>F Test</i>
Awareness and involvement in francophone culture (E)	1.45 (0.71) n = 147	1.49 (0.84) n = 169	No
French			
Language and communication (C)	1.24 (0.82) n = 146	1.34 (0.89) n = 165	No
Awareness of self and the environment (A)	1.54 (0.73) n = 126	1.79 (0.78) n = 141	Yes***
Cognitive skills (B)	0.73 (0.55) n = 126	0.96 (0.64) n = 141	Yes***
Physical/motor skills (D)	0.36 (0.36) n = 126	0.58 (0.57) n = 140	Yes***
English			
Language and communication (C)	1.21 (0.70) n = 28	1.45 (0.85) n = 35	No
Awareness of self and the environment (A)	1.55 (0.56) n = 19	2.07 (0.71) n = 25	Yes**

²⁰ See also: Government of Canada (2007), “The Well-Being of Canada's Young Children: Government of Canada Report 2006” on the Internet at http://www.socialunion.gc.ca/well_being/2007/en/chapter_3.shtml (May 26, 2008).

<i>Child's gender</i> <i>Domains</i>	<i>Boys</i> <i>Mean score</i> <i>(standard deviation)</i> <i>N</i>	<i>Girls</i> <i>Mean score</i> <i>(standard deviation)</i> <i>n</i>	<i>Significant</i> <i>differences between</i> <i>boys and girls?</i> <i>F Test</i>
Cognitive skills (B)	0.85 (0.45) n = 19	1.05 (0.54) n = 25	No
Physical/motor skills (D)	0.31 (0.36) n = 19	0.38 (0.45) n = 25	No

Note: Significance level: *** $\leq 1\%$; ** $\leq 5\%$.

3.4.2 Correlations between age and score

Next we examined the correlations between scores in the different test domains and children's age (measured in months). Results confirmed a significant correlation between age and the score obtained on domains A ($p = 0.000$), B ($p = 0.000$), C ($p = 0.000$) and D ($p = 0.000$) for the French test and domains B ($p = 0.009$) and C ($p = 0.023$) for the English test.²¹ These results, shown in detail in Table 3.4, demonstrate that, as expected, the test discriminates children as a function of age for most domains other than domain E. This last result is not surprising since parents provided the answers to three of the six items on domain E. Also, it is unlikely that this domain would be correlated to age since it does not measure child development, but rather the environment the child is growing up in.

²¹ If the number of children taking the test in English had been higher, the correlation between age and the different domains would no doubt have been significant.

Table 3.4: Correlation between scores by domain and age at time of testing

<i>Domains</i>	<i>Age in months</i> <i>Willms pilot project</i> <i>Correlation (n)</i>	<i>Age in months</i> <i>Readiness to Learn project</i> <i>Correlation (n)</i>
Awareness and involvement in francophone culture (E)	N/A	0.06 (316)
<i>French</i>		
Language and communication (C)	N/A	0.34*** (311)
Awareness of self and the environment (A)	N/A	0.45*** (267)
Cognitive skills (B)	N/A	0.49*** (267)
Physical/motor skills(D)	N/A	0.47*** (266)
<i>English</i>		
Language and communication (C)	0.44	0.29** (63)
Awareness of self and the environment (A)	0.39	0.27 (44)
Cognitive skills (B)	0.50	0.39*** (44)
Physical/motor skills(D)	0.65	0.22 (44)

Note: Significance level: *** $\leq 1\%$; ** $\leq 5\%$.

A comparison with correlations reported by Willms (2007) in his validation study using an English sample shows that while correlations found using the Readiness to Learn project sample are in the same direction they are somewhat less pronounced.

3.4.3 Comparison of scores as a function of mother tongue

A comparison of scores as a function of mother tongue categories explores the hypothesis that initial differences between the experimental groups are due to children's language skills. The protocol for determining the testing language may not have fully discriminated between an anglophone child who should have taken the test in English and a more francophone child who should have taken the test in French. Although the domains are not necessarily influenced by the test language, the fact that the test *was given in French* could potentially make a difference in the score of a child who speaks mostly English or both English and French. Previous studies have demonstrated that having more than one mother tongue (as is the case for bilingual children) influences the size of a child's vocabulary compared to unilingual children (e.g., Bialystok, 2006). Vocabulary size is in itself a measurement of a child's language skills. To verify this hypothesis, four categories of mother tongue were computed:

- French
- English

- Other²²
- Both French and English equally

For the French test, an examination of Table 3.5 below illustrates the following points with respect to the scores obtained by children as a function of their mother tongue:

- For domain **A** ($F(3.263) = 12.35, p = 0.000$), those with French as their mother tongue scored higher than those whose mother tongue is English, while children in the “other” category scored significantly lower than those who speak French only. Children with English only as their mother tongue also scored much lower than children with two languages.
- For domain **C** ($F(3.307) = 30.25, p = 0.000$), children with French only as their mother tongue scored significantly higher than children with English only as their mother tongue. According to the protocol, the latter group demonstrated sufficient knowledge of French to be tested in this language.
- For domain **E** ($F(3.312) = 106.97, p = 0.000$), scores were significantly higher when children had French only as their mother tongue compared to all of the other language categories (2, 3 and 4). Having English as a mother tongue resulted in a lower score compared to children with both languages and children in the “other” category.
- No significant difference was observed in scores for domains **B** ($F(3.263) = 1.07, p > 0.05$) and **D** ($F(3.262) = 1.06, p > 0.05$).

For the English test, we observed significant differences between the mother tongues for domain **C** ($F(3.59) = 3.05, p = 0.000$). Cells of less than five prevent us from reporting results for the other domains. This result should be considered with caution given the low number of children in categories other than English. Note that domain **C** also helped to determine the testing language for children who had been exposed to a more bilingual environment, which is why children with French as their mother tongue have a score in this domain.

²² The category “Other” includes children whose mother tongue, as reported by the parent, is “French and another language”, “English and another language” or “French, English and another language”. This category consists largely of children for whom French is one of their mother tongues. It was necessary to group categories this way since several cells had less than five children.

Table 3.5: Analysis of variance (ANOVA) as a function of domain and child's mother tongue

<i>Child's mother tongue</i>	<i>French (1)</i>	<i>English (2)</i>	<i>Other (3)</i>	<i>French and English (4)</i>	<i>Significant differences between groups?</i>
<i>Domains</i>	<i>Mean score (standard deviation) n</i>	<i>Mean score (standard deviation) n</i>	<i>Mean score (standard deviation) n</i>	<i>Mean score (standard deviation) n</i>	<i>Post-hoc</i>
Awareness and involvement in francophone culture (E)	1.83 (0.54) n = 218	0.41 (0.48) n = 56	0.92 (0.71) n = 14	1.14 (0.68) n = 28	Yes 1 > 2, 3, 4 *** 2 < 4 *** 2 < 3 **
French					
Awareness of self and the environment (A)	1.79 (0.73) n = 212	0.93 (0.66) n = 22	1.13 (0.58) n = 10	1.49 (0.68) n = 23	Yes 1 > 2 *** 1 > 3 ** 2 < 4 **
Cognitive skills (B)	0.88 (0.61) n = 212	0.65 (0.67) n = 22	0.72 (0.57) n = 10	0.86 (0.65) n = 23	No
Language and communication (C)	1.54 (0.81) n = 217	0.48 (0.52) n = 53	0.97 (0.81) n = 13	1.04 (0.59) n = 28	Yes 1 > 2 ***
Physical/motor skills(D)	0.49 (0.51) n = 212	0.30 (0.33) n = 22	0.56 (0.46) n = 10	0.47 (0.50) n = 22	No
English					
Language and communication (C)	0.93 (0.94) n = 8	1.55 (0.79) n = 42	0.89 (0.49) n = 6	1.00 (0.27) n = 7	Yes**

Note: Significance level: *** $\leq 1\%$; ** $\leq 5\%$.

To complete the analysis of the mother tongue's impact on EYE-AD scores, it is interesting to investigate the relationship between children's mother tongue and the language in which they answered the EYE-AD. It is plausible that some children had the minimum number of points necessary to take the test in French despite a more limited comprehension of this language. In addition, the decisional tree favoured giving the test in French in cases where it was difficult to determine the language in which the child was most at ease. For this reason, it is relevant to examine the distribution of scores for children assessed in a language other than their mother tongue. To verify this possibility, children were split into three groups: Francophones, whose mother tongue is French *only*; Anglophones, whose mother tongue is English *only*; and bilingual children, which include Allophones and bilingual children (categories 3 and 4 in Table 3.5). As observed in Table 3.6, 34 bilingual children took the test in French and 26 children were not assessed in their mother tongue. Among this last group, there were a large percentage of children for whom it was difficult to confirm the language in which the assessment should be conducted.

Table 3.6: Breakdown of final testing language by mother tongue

Language groups	Final testing language		TOTAL
	French n (%)	English n (%)	
Francophones	213 (79.2)	4 (9.1)	217 (69.3)
Anglophones	22 (8.2)	32 (72.7)	54 (17.3)
Bilingual	34 (12.6)	8 (18.2)	42 (13.4)
TOTAL	269 (85.9)	44 (14.1)	313 (100)

Table 3.7 details the results of an analysis aimed at determining the dispersion of children who took the test in French as a function of their mother tongue and their experimental group. Of the 269 children assessed in French, the majority of bilingual children were in the program group ($X^2(4, N = 310) = 17.92, p = 0.001$). We also observed that the comparison groups had a higher proportion of children who were tested in their mother tongue. Conversely, nearly a third of the children in the program group were either not tested in their mother tongue or had two mother tongues. According to evaluators, most children who were not tested in their mother tongue were very shy and/or did not have a good mastery of English or French.

Table 3.7: Number of children who took the test in French by experimental group

Experimental groups	Program group (G1) n (%)	Formal daycare comparison group(G2) n (%)	Informal care comparison group(G3) n (%)	Total sample n (%)	Significant differences between groups? Chi square
Testing was done in the child's mother tongue	62 (66.3)	77 (81.9)	74 (90.2)	213 (79.1)	Yes***
Testing was not done in the child's mother tongue	10 (10.9)	9 (9.6)	3 (3.7)	22 (8.2)	
Bilingual* tested in French	21 (22.8)	8 (8.5)	5 (6.1)	34 (12.7)	
TOTAL	93 (34.3)	94 (35.1)	82 (30.6)	269 (100)	

Notes: Significance level: *** $\leq 1\%$; ** $\leq 5\%$.

New analyses were done to study the distribution of the scores according to the child's mother tongue and the testing language. A t-test revealed that for domain:

- **A:** Children with a lower mastery of French and who were tested in French, have a lower mean score ($M = 1.20, ET = 0.70$) than Francophones tested in French ($M = 1.79, ET = 0.73, t(265) = 5.42, p = 0.000$).

- **B:** Children with a lower mastery of French and who were tested in French, have a mean score ($M = 0.75$, $ET = 0.64$) comparable to that of Francophones tested in French ($M = 0.88$, $ET = 0.61$, $t(265) = 1.40$, $p > 0.05$).
- **C:** Children with a lower mastery of French and who were tested in French, have a lower mean score ($M = 0.89$, $ET = 0.66$) than Francophones tested in French ($M = 1.41$, $ET = 0.87$, $t(308) = 5.30$, $p = 0.000$).
- **D:** Children with a lower mastery of French and who were tested in French, have a mean score ($M = 0.42$, $ET = 0.43$) comparable to that of Francophones tested in French ($M = 0.49$, $ET = 0.51$, $t(264) = 0.96$, $p > 0.05$).
- **E:** Children with a lower mastery of French and who were tested in French, have a lower mean score ($M = 0.92$, $ET = 0.66$) than Francophones tested in French ($M = 1.64$, $ET = 0.73$, $t(311) = 7.33$, $p = 0.000$).

Finally, an analysis of covariance was performed to test for effects of age and gender on children's scores. This analysis showed significant differences between francophone children and children with a lower mastery of French in their EYE-AD scores (Pillai's Trace = 0.33; $F(5.258) = 25.11$, $p = 0.000$). Post-hoc analyses indicated that a lower mastery of French (controlling for age and gender) was associated with significantly lower scores in the following domains:

- **A:** Was significant ($F(1.265) = 47.30$, $p = 0.000$)
- **B:** Was significant ($F(1.265) = 4.65$, $p = 0.03$)
- **C:** Was significant ($F(1.265) = 32.84$, $p = 0.000$)
- **E:** Was significant ($F(1.265) = 105.92$, $p = 0.000$)

These results suggest that level of mastery of a language has an impact on scores on four of the five domains (with the exception of domain D; $F(1.265) = 2.88$, $p > 0.05$). The small number of participants in some cells prevents conducting further analyses relative to the child's experimental group. We can, however, assume that some of the differences observed between the experimental groups may be explained by a greater number of children in G1 with a lower mastery of French and tested in French. Future analyses will need to consider the language in which the EYE-AD test is administered, and children's mother tongue.

3.4.4 Comparison of scores as a function of level of francophone vitality in the community

Differences between scores as a function of level of francophone vitality in the community were examined. For the purposes of this analysis, francophone vitality is defined as *the percentage of francophones in the community*. According to Giles, Bourhis and Taylor (1977, in Gilbert et al., 2004), this demographic variable is part of the three categories of variables to include in an analysis of ethnolinguistic vitality (these variables are group status, demographic variables and variables related to institutional support).

Ethnolinguistic vitality is a complex concept and the percentage of Francophones in a community is simply a *proxy* of one dimension of this concept. It is an important variable to be considered in child development within the context of a francophone minority community, since

it is a good indicator of the availability of French services and informs us about the linguistic environment of the community that influences the child (Landry and Allard, 1994). Being Francophone does not necessarily mean that a person regularly uses French in their communications: “Allard and Landry (1986, 1994) found that predictions of language behaviour are more accurate if the subjective notion of ethnolinguistic vitality is expanded to include, in addition to factual and exocentric beliefs, egocentric beliefs of the group members, i.e. their desires and aspirations.” (in Gilbert et al., 2004).

The percentage of Francophones present in the community was broken down into three categories: high, medium or low. Edmundston, a community that is more than 90% Francophone, falls into the “high” category. The communities of Cornwall and Orleans (between 15% and 40% Francophone) fall into the “medium” category. Durham, Edmonton and Saint John fall into the “low” category, since these communities are 5% or less Francophone (Statistics Canada, 2006b).

Domains E ($F(2.313) = 18.83, p = 0.000$) and C ($F(2.308) = 5.37, p = 0.005$) of the French test were the only ones where significant differences were observed. Table 3.8 shows children’s scores according to the level of francophone vitality in their community. Below are the main results:

For the French test:

- Children belonging to a community with a high level of vitality score significantly higher on domain E than children in a community with medium or low vitality.
- Children belonging to a community with a low level of vitality score significantly lower on domain C than children in a community with high vitality; children in communities with medium vitality score significantly lower than the group with high vitality.
- On domain A, we observe a non-significant trend in which children from a community with high vitality obtain better scores than children in communities with medium or low vitality.
- We did not observe any association or trend between vitality and scores obtained on domains B and D.

For the English test:

- On all domains, there is no significant difference between communities in terms of scores obtained, regardless of level of francophone vitality in the community.
- We did, however, note a slight trend whereby lower francophone vitality in a community is associated with a higher score on the English test.

Overall, these results stress the importance of considering the community’s vitality level in future analyses of scores obtained on domains E and C for the French test.

Table 3.8: Analysis of variance (ANOVA) by domain as a function of level of vitality in the community

Level of vitality Scores by domain	High (1) <i>Edmundston</i>	Medium (2) <i>Cornwall Orleans</i>	Low (3) <i>Durham Edmonton Saint John</i>	Significant differences between groups? <i>F Test</i>
Awareness and involvement in francophone culture (E)	1.90 (0.37) n = 83	1.29 (0.78) n = 124	1.37 (0.89) n = 109	Yes 1 > 2*** 1 > 3***
French test				
Language and communication (C)	1.55 (0.74) n = 83	1.19 (0.86) n = 124	1.21 (0.89) n = 104	Yes 1 > 3** 1 > 2***
Awareness of self and the environment (A)	1,81 (0,66) n = 83	1,59 (0,73) n = 98	1,62 (0,86) n = 86	No
Cognitive skills (B)	0.83 (0.58) n = 83	0.84 (0.58) n = 98	0.88 (0.69) n = 86	No
Physical/motor skills (D)	0.45 (0.51) n = 83	0.42 (0.39) n = 97	0.56 (0.57) n = 86	No
English test				
Language and communication (C)	N/A	1.31 (0.81) n = 36	1.39 (0.77) n = 27	No
Awareness of self and the environment (A)	N/A	1.78 (0.70) n = 24	1.92 (0.70) n = 20	No
Cognitive skills (B)	N/A	0.93 (0.49) n = 24	1.00 (0.53) n = 20	No
Physical/motor skills (D)	N/A	0,33 (0,35) n = 24	0,38 (0,48) n = 20	No

Note: Significance level: *** ≤ 1 %; ** ≤ 5 %.

3.5 SUMMARY OF RESULTS AND DISCUSSION

This section concludes the results of the first wave of EYE-AD assessments. SRDC is satisfied with the procedures used by evaluators and community coordinators regarding the administration of the test, both in terms of the approach used with parents (which resulted in a high response rate), and in terms of the administration of the test itself. This procedure will be retained in future waves.

Below are the main conclusions to be drawn from the results:

Test protocol:

The protocol used to determine the testing language had a marked effect on results. It should be noted that the decisional tree (described in detail in Appendix B) favoured the administration of the test in French. Consequently, it is highly likely that some children would have scored

better had the test been administered in English. Two examples of situations (observed several times) support this observation. The first example is of a child at home with his/her anglophone mother and for whom, English is the dominant mother language. This child would probably score less than 6 in domain E on the French test. According to the test protocol, the child would then be assessed in both languages for domain C. If the child is shy or very young, a low score will likely be obtained in both languages for domain C. According to the protocol, the remainder of the test would be administered in French, even though the child has a lower understanding of this language. The second example is of a child whose mother tongue is English and who attends a francophone daycare facility. This child may obtain a high enough score in domain E to continue the test in French, even though the child would have done better in English. Thus, the protocol for determining the test language penalizes young children whose mother tongue is English, particularly when their language skills are not very developed in either language.

According to results of analyses, there are only 16 non-francophone children²³ who took the test in French (from a total of 56) and completed domain C in English (a step in the decisional tree). Hence, 71% of the children did not have to go further than domain E in the protocol before the testing language was determined, even if they were not entirely francophone. Concerning the level of non-response noted by the evaluators (discussed in section 3.1.3), it should diminish in the second wave of EYE-AD. Children will be older and possibly have more developed language skills to answer questions, which will facilitate testing of domain E, and by extension, the protocol itself.

Differences between experimental groups:

In light of the homogeneity of the groups in terms of percentage of boys and girls and mean age, results of comparative analyses for the three experimental groups are interesting. This is particularly true for the program group (G1) and the formal daycare comparison group (G2). In three out of four communities,²⁴ daycares are managed by the same organization (with similar training and admission criteria). Results underlined differences between experimental groups for most domains in the French test, with the exception of domain E. Children in the program group obtained the lowest results compared to the other two groups.

One hypothesis that might explain these results is that the percentage of children whose mother tongue is French differs within each experimental group (for example, 55.3% children in G1 have French only as their first language versus 73.4% in G2 and 79.8 % in G3). A child who does not have French as their first language may have trouble understanding the test questions, and it may be more difficult to verbalize their answers. Also, G1 had the most non-francophone children who took the test in French.

Additional analyses were conducted to further explore the response pattern across the experimental groups. Results of one analysis of variance indicated that children in the program group obtained the lowest scores in domains influenced by the spoken language, notably domains A, C and E. Results of a second more restrictive analysis on children's mother tongue

²³ Children who are not completely Francophone.

²⁴ Four communities out of six had a formal daycare control group (G2). There was only one Francophone daycare with children from the program group (G1) in two other communities, although in one of these communities, we found several children enrolled in a paid junior kindergarten program offered by the school board. This program was deemed equivalent to enrollment of the children in a formal daycare control group (G2).

(entirely francophone versus not entirely francophone, controlling for age and gender), not being entirely francophone resulted in lower scores in most domains with the exception of motor development (D). While these results are interesting, further research is necessary to investigate other possible explanations for the differences between the groups.

At another level, these results led us to hypothesize a self-selection bias in the program group daycares (G1). For example, these parents, anxious to preserve the French language and culture, though less francophone themselves (if we consider their language profile established in chapter 4), may have enrolled their child in the Readiness to Learn project to compensate for a less francophone family environment. Or parents may have enrolled their child in the program daycare with the hopes that Readiness to Learn project would help improve their child's French skills before the child is enrolled in a French school. This hypothesis also stems from the message used to recruit Readiness to Learn project participants. The key message promoted during the campaign was "The purpose of the project is to assess how well a new preschool child care program can better prepare young francophone children to succeed in French school." The possibility of a self-selection bias among participants in the program daycare will be investigated in a parent follow-up survey.

Children's age and gender, and level of francophone vitality in the community:

Age (measured in months) was moderately correlated with scores in all domains of the French test, with the exception of domain E. The lack of a correlation between age and score in this domain was not surprising since SRDC used parents' answers for three of the six questions in this domain. Field experience has also shown that younger children are often shy. They tend to not always answer questions, even when the mother or the educator says that the child is normally capable of performing this task. This observation is also reported in other papers written on the subject (Atkins-Burnett, 2007). More generally, younger children scored lower due to the increasing difficulty of the test items.

Correlations found in our analyses were quite similar to those found in Willms's study (2007). The exception was with domain D, for which Willms reports a much higher correlation with age. Two possibilities may explain this difference: the lack of variation in the score obtained in this domain may be due to a floor effect and a more limited age range in the Readiness to Learn project sample.²⁵

In terms of gender analyses, we observed a stronger performance by girls on domains A, B and D in the French test and domain B in the English test. Unfortunately, we cannot compare these results with other work validating scores as a function of gender since these analyses were not presented in Willms' report (2007). However, our results are in line with previous studies on early child development, particularly those done by Janus and Offord (2007). These authors used the Early Development Instrument (EDI), a test similar to EYE-AD. EDI is similar to EYE-AD in the five domains being assessed: physical health and well-being (including items related to motor development), social skills, emotional maturity, cognitive and language development, communication skills and general knowledge. Data gathered for 16,000 kindergarten children (aged 4 and 5) demonstrated that girls had significantly higher scores than boys in the five domains being studied.

²⁵ A floor effect occurs when the questions are too difficult for the sample tested and the majority of scores fall in the lower portion of the theoretically postulated distribution of scores.

Finally, analyses as a function of vitality level showed that the proportion of Francophones influenced the scores for domains E and C. Children in the community of Edmundston (where the level of vitality is high) score significantly higher on average than children in the other communities. One fact remains: there are no significant differences observed between the other two categories of vitality (medium and low) which include the five other communities.

Methodological considerations:

The main research question being examined by the Readiness to Learn project is: “Does the new preschool child care program, with its two components, have a significant impact on children’s language skills, francophone cultural identity and school readiness beyond the development that would take place without this program, and apart from other external factors that might come into play?”. Three specific hypotheses ensue from this research question (see Section 2.4).

The EYE-AD was designed to assess children’s school readiness. It therefore allows us to answer the research hypothesis regarding with how prepared children are when they begin school. A second research hypothesis deals with children’s language skill. To be able to test this hypothesis, it is important to measure children’s language skills with a more sensitive tool to detect variations in these skills. We plan to use a sub-set of EYE-AD items to create new scales measuring: 1) children’s expressive vocabulary; 2) their receptive vocabulary; 3) their knowledge of the alphabet; and 4) their phonological awareness. To validate the new configuration of EYE-AD items, we plan to use other tools known for their psychometric properties and sensitivity to detect minute differences in children’s language skills. One of these tools, the Expressive One Word Picture Vocabulary Test (French version - EOWPVT-F), is recognized in the child development field as one of the best measures of the size of a child’s expressive vocabulary; a strong predictor of academic success (Chiang and Rvachew, 2007). These new tools will also permit tracking children over the long term; the EYE-AD was not designed to assess children over the age of six.

Future analyses:

The results of this first wave of assessments provide interesting conclusions for future analyses. First, it is clear that the EYE-AD presents itself with sound psychometric properties. However, domain E results must be interpreted with caution. Many difficulties were encountered during field testing of this domain. These difficulties required the substitution of children’s answers by their parents’ answers for half of the items used to measure this domain. Ongoing monitoring of this domain is necessary to ascertain the validity of obtained scores.

Second, children’s overall weak scores in this first wave suggest a floor effect. The high level of non-response certainly contributed to this effect. Also, some test questions were particularly difficult, and at times, close to a third of the children obtained a score of “0” for these questions. Atkins-Burnett (2007) sums up the various problems involved in taking direct measurements in young children quite well: *“They are not valid for all children, often lack congruence with curriculum, and have added measurement error in young children.”*

Third, it is important to note that the EYE-DA was developed and validated in English and then translated into French. Translating tools into another language and subsequent use remains controversial in the field. The controversy is centred on the size of the measurement error of the

tool itself (Garcia et Desrochers, 1997; Trudeau et al., 1999). Best practices stipulate first proceeding with a back translation, a method by which the tool is first translated into the other language, for example, from English to French, followed by translating the tool back to its initial language (that is, from French to English). All differences in the translation are then discussed to conceptually clarify the items presenting disparities in the translation. A second important step is to conduct analyses to eliminate the possibility that differences in the performance of participants completing different linguistic versions of the tool are due to its translation. A good practice is to verify the equivalency between the initial version and the translated version in terms of its ability to preserve the meaning of words and ideas, the level of difficulty of the vocabulary used, and particularly relevant to the EYE-DA, that items are ordered in ascending level of difficulty. These differences become apparent when the pattern of respondents' responses to the initial tool is compared to the pattern of respondents' responses to the translated tool. Lastly, additional analyses are done to validate the tool in its latest testing language (Childs et Dénommé, 2008; Trudeau, 2007).

In terms of future analyses (in addition to age and gender), it will be important to include variables related to the language profile and the linguistic composition of the household. According to Landry and Allard (1997), the greater a group's minority situation, the higher the rate of exogamy. Moreover, one cannot take for granted that the minority language is the language spoken in the exogamous home (which by definition has at least one francophone parent). These authors (citing a report prepared for the Commission nationale des parents francophones (CNPF)) report that only 17% of exogamous couples chose to raise their young children (aged 0 to 4) in French. Therefore, languages spoken in the home are important to consider in analyses.

4.0 Baseline survey results

This chapter details the results of the raw and derived variables in the baseline survey. It aims to verify the similarity of parents' profiles in the three experimental groups prior to the intervention, and to identify factors related to child development that should be taken into account in future impact analyses.

The chapter begins with a brief overview of the response rate and how missing data were handled. General information and socio-demographic variables (section I of the survey) for the entire sample follow, along with comparisons across the three experimental groups. Homogeneity between experimental groups is verified and presented for the following socio-demographic variables: respondent's relationship to the child, language of test, child's gender, family structure, mother's age at birth of the target child, parents' level of education, number of hours worked by parents, household income, and parents' language profile.

The second section presents overall and comparative results for scales measuring several aspects of parent-child interactions, including positive interactions, empowerment, authoritative parenting style, literacy activities and the languages in which these activities take place, and finally the languages used by the child. The third section of the chapter includes measures of social capital, social support, family functioning and depression. The fourth section combines items related to level of involvement in the francophone culture. The fifth section, entitled "Francophone environment", combines involvement towards the community and perceived francophone vitality. The sixth section deals with child care arrangements. The seventh section presents a matrix of the correlations between the outcomes (developmental components measured by the EYE-AD) and child development correlates. The chapter ends with a discussion of the main findings.

The reader should take note of the following points:

- A table summarizing the study constructs (definition and internal consistency coefficient) can be found in section 2.3.2 of chapter 2.
- Figures found in this chapter provide details on the results of the total sample, while tables have been used to present results of comparative analyses of the experimental groups.
- Tables do not contain results for cells with five participants or less. Where conceptually justified, data were combined to present the results in situations where cells had less than five cases. Consequently, the percentages listed in the tables comparing the experimental groups were calculated using cells with more than five cases and do not necessarily correspond to the percentages shown in the figures for the total sample.
- Results are presented by section, in the same order that the questions appeared on the baseline survey.
- The "Future analyses" section at the end of this chapter highlights the most relevant findings.

4.1 RESPONSE RATE AND MISSING DATA

The survey was conducted from May to October 2007, just before or shortly after the implementation of the new preschool child care program. Results of the baseline survey are based on a sample of 325 respondents,²⁶ which represents a **response rate of 100%**. Moreover, there was very little missing data for the variables included in this survey. In view of the small amount of missing data, no particular measures were taken to account for it. Respondents declining to take the survey were simply removed from the analyses.

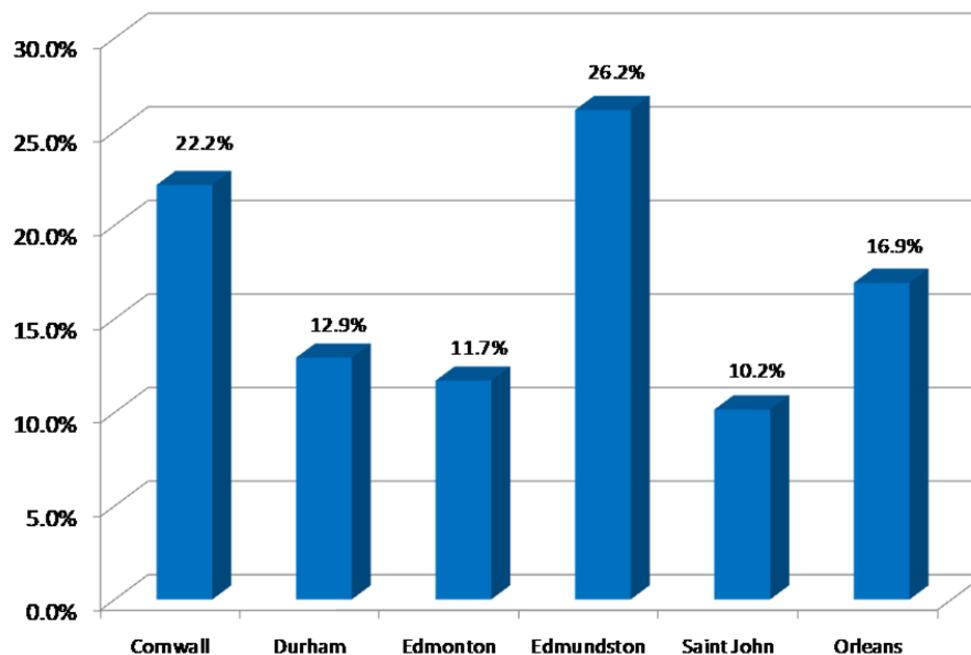
4.2 SECTION I: SOCIO-DEMOGRAPHIC INFORMATION

The following section presents an overall profile of the sample, and provides comparisons between the experimental groups for a series of socio-demographic variables such as family structure, level of education, household income and language profile.

4.2.1 Participants by experimental group and community

Total sample: The 320 parents²⁷ of the 325 children studied are from six communities across Canada. When the baseline survey was administered, the communities of Edmundston and Cornwall had the greatest proportion of participants (26.2% and 22.2%, respectively), followed by the communities of Orleans (16.9%), Durham (12.9%), Edmonton (11.7%) and Saint John (10.2%) (see Figure 4.1).

Figure 4.1: Number of participants by community



²⁶ When the parents' baseline survey was conducted, there were 325 children. However, this number had dropped to 320 children enrolled in the Readiness to Learn project by the time that the first assessment was done in October 2007.

²⁷ A survey and a consent form were completed by 320 families with 325 children (there were five sets of twins).

Experimental groups: Table 4.1 shows a distribution of the final number of participants in each group by community. As can be observed, the informal care comparison group (G3) is smaller than the other groups in Cornwall, Durham and Saint John. It was very difficult to recruit francophone families in communities with a smaller francophone population. Two communities – Saint John and Edmonton – only have one daycare centre for young francophone families. It is therefore not surprising that there is no formal daycare comparison group in Saint John. The situation was slightly different in Edmonton. There are several children enrolled in a paid junior kindergarten program offered by the Edmonton school board. This program was deemed equivalent to the one offered in a comparison group daycare; therefore, children enrolled in junior kindergarten are included in the formal daycare comparison group.

Table 4.1: Number of participants by experimental group and by community at the end of the enrolment period (October 31, 2007)

<i>Experimental group</i> <i>Community</i>	<i>Program group (G1)</i> <i>n (%)</i>	<i>Formal daycare comparison group (G2)</i> <i>n (%)</i>	<i>Informal care comparison group (G3)</i> <i>n (%)</i>	<i>TOTAL</i> <i>n (%)</i>
Cornwall	23 (7.1)	32 (9.8)	17 (5.2)	72 (22.2)
Durham	16 (4.9)	18 (5.5)	8 (2.5)	42 (12.9)
Edmonton	14 (4.3)	14 (4.3)	10 (3.1)	38 (11.7)
Edmundston	19 (5.8)	32 (9.8)	34 (10.5)	85 (26.2)
Saint John	23 (7.1)	–	10 (3.1)	33 (10.2)
Orleans	18 (5.5)	18 (5.5)	19 (5.8)	55 (16.9)
TOTAL	113 (34.8)	114 (35.1)	98 (30.2)	325 (100)

4.2.2 Respondent's relationship to the child and survey language

Total sample: By definition, the respondent is the person most knowledgeable (PMK) about the child. Among the 325 baseline surveys conducted, the majority of PMK (90.5%) were the child's biological or adoptive mother, while a much smaller percentage (9.5%) of surveys were completed by the child's biological or adopted father. There were no significant differences between the three experimental groups in terms of the respondent's relationship to the child ($\chi^2(2, N = 325) = 4.88, p > 0.05$). Since the number of cases per cell for G3 was less than five, Table 4.2 presents results for G1 and G2 only. Note that the high percentage of mothers designated as the PMK is consistent with the NLSCY, where mothers are usually the ones who answer the survey (Statistics Canada, 2006b, p. 25).

With respect to the language in which the survey was conducted, 289 surveys (88.9%) were completed in French and 36 (11.1%) in English. G3 had less surveys completed in English than G1 and G2 ($\chi^2(2, N = 325) = 10.21, p < 0.01$). Since there were less than five cases per cell for G3, only results for G1 and G2 are presented in the table.

Table 4.2: Respondent's relationship to the child, and the survey language for the groups in which the children attend a formal daycare centre (G1 and G2)

<i>Experimental group</i>	<i>Program group (G1)</i>	<i>Formal daycare comparison group (G2)</i>	<i>Significant differences between groups</i>
<i>Variable</i>	<i>n (%)</i>	<i>n (%)</i>	<i>Chi square</i>
<i>Respondent's relationship to the child</i>			
Mother	100 (30.8)	100 (30.8)	No
Father	13 (4.0)	14 (4.3)	
<i>Survey language</i>			
French	99 (34.3)	95 (32.9)	Yes***
English	14 (12.4)	19 (16.7)	

Note: Significance level: *** $\leq 1\%$.

4.2.3 Mothers' mean age

Total sample: The mean age of mothers when the target child was born is **29.2**, with a standard deviation of 4.6 years (age range is 18 to 42).

Experimental groups: An analysis of the variance showed no significant difference between the three experimental groups in terms of mothers' age when the child was born [$F(2, 321) = 2.12, p > 0.05$ (homogenous variances)].

4.2.4 Siblings and family composition

Siblings

Total sample: The number of children per household includes the target child and his/her siblings. The families studied had an average of 2.1 children (standard deviation of 0.82, with a range of 1 to 5 children).

Experimental groups: The Chi square test revealed significant differences between experimental groups with respect to the number of children per family ($X^2(4, N = 325) = 19.64, p < 0.001$) (see Table 4.4). The mean number of children per household in the informal care comparison group (2.40) is higher than the other two groups (the means for G1 and G2 were 1.85 and 2.10 children, respectively). The table also shows that there were less cases of an only child in G3 than in G2, and that there are more cases of an only child in G1 than in G2 and G3. There are more target children in G3 with three or more siblings.

Table 4.4: Comparison of the number of children in each family, by experimental group

<i>Experimental group</i>	<i>Program group (G1)</i>	<i>Formal daycare comparison group (G2)</i>	<i>Informal care comparison group (G3)</i>	<i>TOTAL</i>	<i>Significant differences between groups</i>
<i>Number of children</i> ²⁸	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	<i>Chi square</i>
Only child	32 (9.8)	23 (7.1)	12 (3.7)	67 (20.6)	Yes***
Two children	68 (20.9)	65 (20.0)	52 (16.0)	185 (56.9)	
Three children or more	13 (4.0)	26 (8.0)	34 (10.5)	73 (22.5)	
TOTAL	113 (34.8)	114 (35.1)	98 (30.2)	325 (100)	

Note: Significance level: *** $\leq 1\%$.

Birth order

Total sample: Questions in the baseline survey allow us to calculate the birth order of target children in relation to their brothers/sisters and half-brothers/sisters. Overall, 112 children have a younger sibling, 167 have older siblings and 10 have a same age sibling (there are 5 sets of twins in the study). Based on this information, it is easy to calculate each child's birth order. Twins are ranked at the same birth order and only children are ranked first.

Experimental groups: Table 4.5 indicates significant differences between the three experimental groups with respect to birth order ($X^2(4, N = 325) = 17.09, p < 0.01$). Specifically, a larger number of children in G1 are first born or only children compared to G2 which, in turn, has a larger number of first-born children than G3. The table also shows a larger number of children in the G3 who are the family's youngest.

Table 4.5: Comparison of target child birth orders by experimental group

<i>Experimental group</i>	<i>Program group (G1)</i>	<i>Formal daycare comparison group (G2)</i>	<i>Informal care comparison group (G3)</i>	<i>TOTAL</i>	<i>Significant differences between groups</i>
<i>Birth order</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	<i>Chi square</i>
1	62 (19.1)	54 (16.6)	42 (12.9)	158 (48.6)	Yes***
2	44 (13.5)	46 (14.2)	31 (9.5)	121 (37.2)	
3	7 (2.2)	14 (4.3)	25 (7.7)	46 (14.2)	
TOTAL	113 (34.8)	114 (35.1)	98 (30.2)	325 (100)	

Note: Significance level: *** $\leq 1\%$.

²⁸ Two categories were combined due to cells with less than five individuals.

Household size

Total sample: Household size corresponds to the number of children and adults who normally live with the PMK and the target child. It is a descriptive variable that is generally examined in relation to the household income, to calculate sufficient income or a low income cutoff (LICO). On average, households consist of 4.1 individuals, with a standard deviation of approximately 1 individual (0.98). The typical Readiness to Learn project family has two parents and two children.

Experimental groups: As shown in Table 4.6, there are significant differences between experimental groups (categories have been combined in order to be able to present these comparisons) ($X^2(4, N = 325) = 12.64, p < 0.05$). The largest households are in G3.

Table 4.6: Comparison of household size by experimental group

<i>Experimental group</i>	<i>Program group (G1)</i>	<i>Formal daycare comparison group (G2)</i>	<i>Informal care comparison group (G3)</i>	<i>TOTAL</i>	<i>Significant differences between groups</i>
<i>Household size</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	<i>Chi square</i>
3 people or less	35 (10.8)	29 (8.9)	14 (4.3)	78 (24.0)	Yes**
4 people	58 (17.8)	59 (18.2)	50 (15.4)	167 (51.4)	
5 people or more	20 (6.2)	26 (8.0)	34 (10.5)	80 (24.6)	
TOTAL	113 (34.8)	114 (35.1)	98 (30.2)	325 (100)	

Note: Significance level: *** $\leq 1\%$.

Family structure

Total sample: In the NLSCY, family structure refers to the “classification of census families into families of now-married couples and common-law couples (with or without children) and single-parent families”. However, the Readiness to Learn project has different categories, since information on the marital status of participating families was not available. Two categories were created using information gathered on family composition: intact families (children living in a household composed of the two biological or adopted parents) and non-intact families (including blended families, foster families and single-parent families). There are eight single-parent families and no foster families in the Readiness to Learn project sample.

Experimental groups: As shown in Table 4.7, the great majority of families participating in the Readiness to Learn project are “intact families”. A Chi square test comparing “intact” families with “non-intact” families did not reveal a significant difference between experimental groups with regards to family composition ($X^2(2, N = 325) = 3.067, p > 0.05$).

Table 4.7: Family structure of participating families

<i>Experimental group</i>	<i>Program group (G1)</i>	<i>Formal daycare comparison group (G2)</i>	<i>Informal care comparison group (G3)</i>	<i>TOTAL</i>	<i>Significant differences between groups</i>
<i>Family structure</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	<i>Chi square</i>
"Intact" families	103 (31.7)	98 (30.2)	91 (28.0)	292 (89.9)	No
"Non-intact" families	10 (3.1)	16 (4.9)	7 (2.2)	33 (10.2)	
TOTAL	113 (34.8)	114 (35.1)	98 (30.2)	325 (100)	

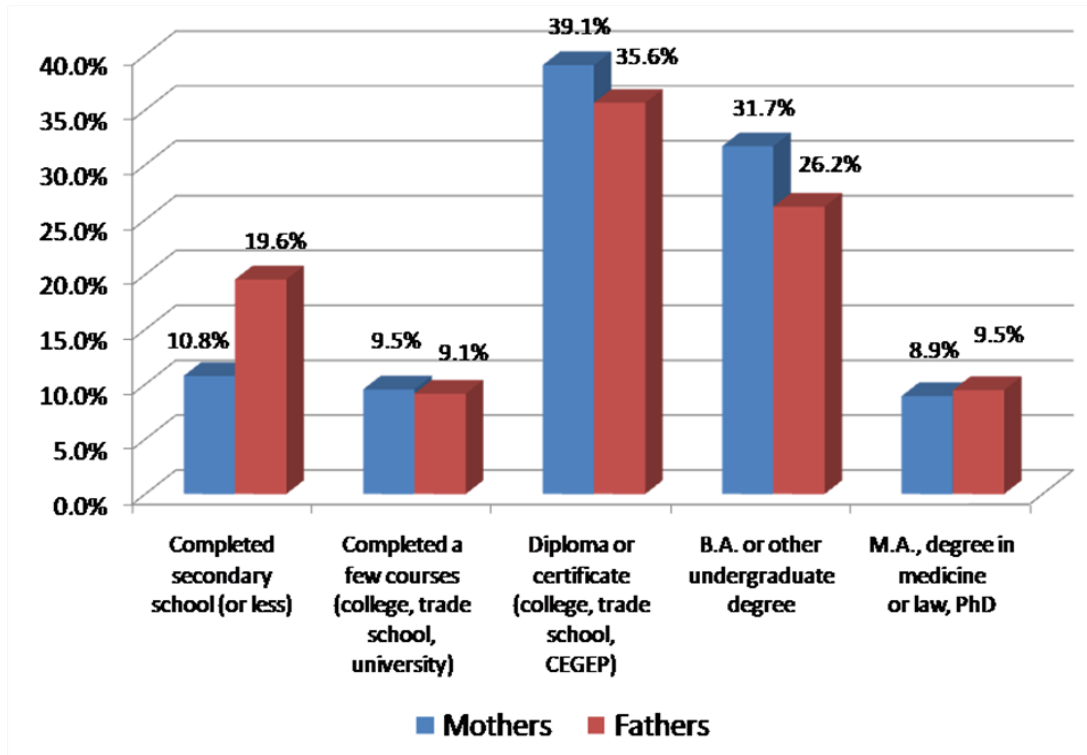
4.2.5 Mothers and fathers level of education

Total sample: Information was collected in the survey regarding the highest level of education attained by the PMK and his/her spouse. Data were collected for 325 mothers and 317 fathers (8 single-parent families are headed by the mother). Results show a diploma or college certificate, received from a trade school or CEGEP to be the highest level of education most frequently attained.

Figure 4.2 shows the distribution for mothers and fathers, combining certain education categories. We observe that mothers have a higher level of education than fathers. Specifically, a slightly higher percentage of **mothers** have a diploma or college certificate from a trade school or CEGEP. There are also a slightly higher percentage of mothers with a bachelor's or other undergraduate degree.²⁹ Conversely, a higher percentage of **fathers** have a high school diploma or lower education level. Finally, the percentage of mothers and fathers with a post-graduate degree is similar.

²⁹ There was no comparative analysis performed between the mother and father's level of education.

Figure 4.2: Highest level of education attained by the parents



Experimental groups: Responses were combined into different categories in order to verify the homogeneity of the experimental groups. The new categories allow for a more even distribution of the sample. A Chi square test comparing level of education failed to reveal significant differences between experimental groups, for mothers ($X^2 (8, 325) = 9.007, p > 0.05$), and fathers ($X^2 (8, N = 317) = 5.404, p > 0.05$) (see Table 4.8). Thus, experimental groups are not significantly different in terms of parents' level of education.

Table 4.8: Results of analyses on the highest level of education achieved (mothers, fathers) between experimental groups

<i>Experimental group</i>	<i>Program group (G1)</i>	<i>Formal daycare comparison group (G2)</i>	<i>Informal care comparison group (G3)</i>	<i>TOTAL</i>	<i>Significant differences between groups</i>
<i>Level of education</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	<i>Chi square</i>
Mothers					
Completed secondary school	8 (2.5)	14 (4.3)	13 (4.0)	35 (10.8)	No
Completed a few post-secondary courses (college, trade school, university)	12 (3.7)	10 (3.1)	9 (2.8)	31 (9.5)	
Diploma/certificate (college, trade school, CEGEP)	44 (13.5)	42 (12.9)	41 (12.6)	127 (39.1)	

<i>Experimental group</i>	<i>Program group (G1)</i>	<i>Formal daycare comparison group (G2)</i>	<i>Informal care comparison group (G3)</i>	<i>TOTAL</i>	<i>Significant differences between groups</i>
<i>Level of education</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	<i>Chi square</i>
Bachelor's or other undergraduate degree	33 (10.2)	40 (12.3)	30 (9.2)	103 (31.7)	
Master's, degree in medicine/law, or PhD	16 (4.9)	8 (2.5)	5 (1.5)	29 (8.9)	
TOTAL	113 (34.8)	114 (35.1)	98 (30.2)	325 (100)	
Fathers					
Completed secondary school	16 (5.0)	25 (7.9)	21 (6.6)	62 (19.6)	No
Completed a few post-secondary courses (college, trade school, university)	9 (2.8)	9 (2.8)	11 (3.5)	29 (9.1)	
Diploma/certificate (college, trade school, CEGEP)	39 (12.3)	39 (12.3)	35 (11.0)	113 (35.6)	
Bachelor's or other undergraduate degree	32 (10.1)	27 (8.5)	24 (7.6)	83 (26.2)	
Master's, degree in medicine/law, or PhD	14 (4.4)	9 (2.8)	7 (2.2)	30 (9.5)	
TOTAL	110 (34.7)	109 (34.4)	98 (30.9)	317 (100)	

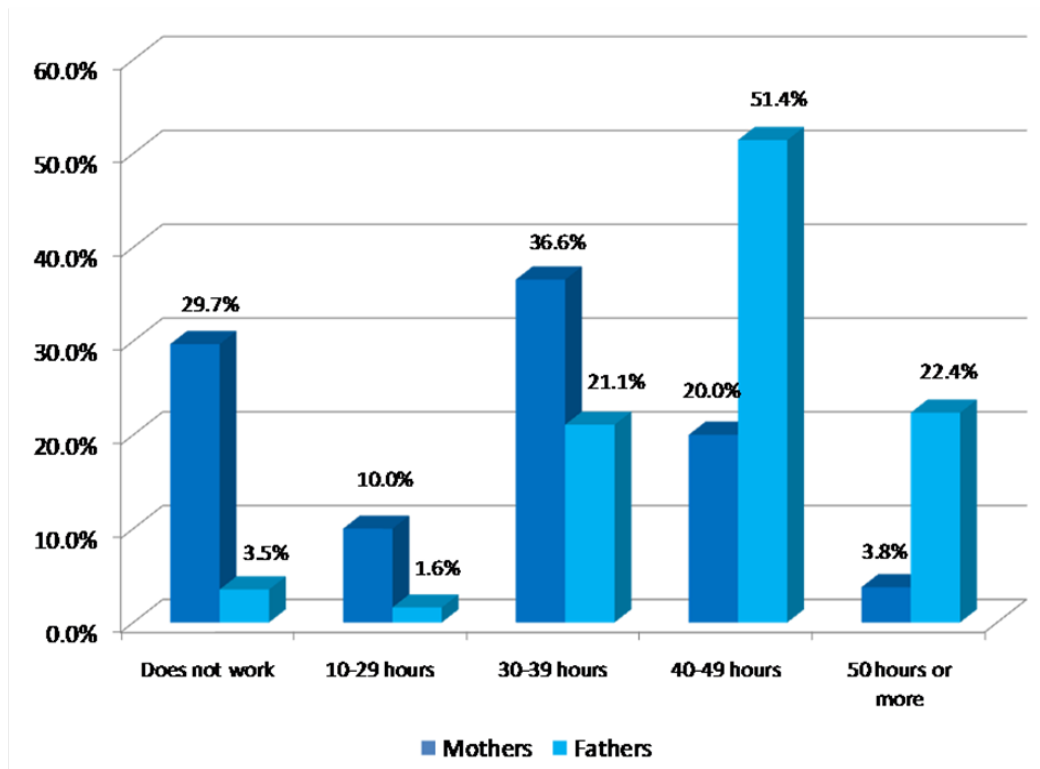
4.2.6 Number of hours worked

Total sample: Parents reported in the baseline survey, the number of hours of paid work per week **for the past four weeks**. Respondents chose from seven categories: does not work, less than 10 hours, 10 to 19 hours, 20 to 29 hours, 30 to 39 hours, 40 to 49 hours and 50 hours or more. The results show that the majority of parents participating in the Readiness to Learn project work full-time.

Figure 4.3 shows the distribution of hours worked by mothers and fathers. For analysis purposes, categories were created to separate those who work full-time (more than 30 hours per week), part-time (less than 30 hours per week) or do not work at all (results were not reported for fathers since cells had less than five cases).³⁰ The results point to differences between hours worked by mothers and fathers. More mothers work part-time than fathers. Conversely, a higher percentage of fathers work full-time. This trend is even more pronounced for fathers working 50 hours or more. Results show 70 fathers working 50 hours or more, compared to 12 mothers.

³⁰ These categories can be compared to studies done by Statistics Canada, in which hours were combined in the same manner for part-time work.

Figure 4.3: Number of hours worked



Experimental groups: Results of comparisons across experimental groups (see Table 4.9) suggest a significant difference in number of hours worked by mothers ($X^2 (6, N = 325) = 20.54, p < 0.01$) but not fathers ($X^2 (8, N = 325) = 11.33, p > 0.05$). The informal care comparison group (G3) had a higher proportion of mothers who do not work, which was not surprising since the majority of children in this group are cared for in the home by their mother. In the program group and the formal daycare comparison group, there were no significant differences between number of hours worked by mothers and fathers. Note that the categories listed in Table 4.9 for the number of hours worked by mothers and fathers are different, due to the low number of cases per cell in the data gathered on fathers.

Table 4.9: Number of hours worked (mothers, fathers) by experimental group

<i>Experimental group</i>	<i>Program group (G1)</i>	<i>Formal daycare comparison group (G2)</i>	<i>Informal care comparison group (G3)</i>	<i>TOTAL</i>	<i>Significant differences between the groups</i>
<i>Hours worked</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	<i>Chi square</i>
Mothers					
Does not work	24 (7.5)	29 (9.1)	42 (13.1)	95 (29.7)	Yes***
Part-time (<30 hours)	17 (5.3)	10 (3.1)	5 (1.6)	32 (10.0)	
Full-time (>30 hours)	72 (22.5)	73 (22.8)	48 (15.0)	193 (60.3)	
<i>TOTAL</i>	113 (35.3)	112 (35.0)	95 (29.7)	320 (100)	

Fathers					
Does not work and part-time (<30 hours)	5 (1.6)	6 (1.9)	5 (1.6)	16 (5.1)	No
Full-time	104 (33.2)	103 (32.9)	90 (28.8)	297 (94.9)	
TOTAL	109 (34.8)	109 (34.8)	95 (30.4)	313 (100)	

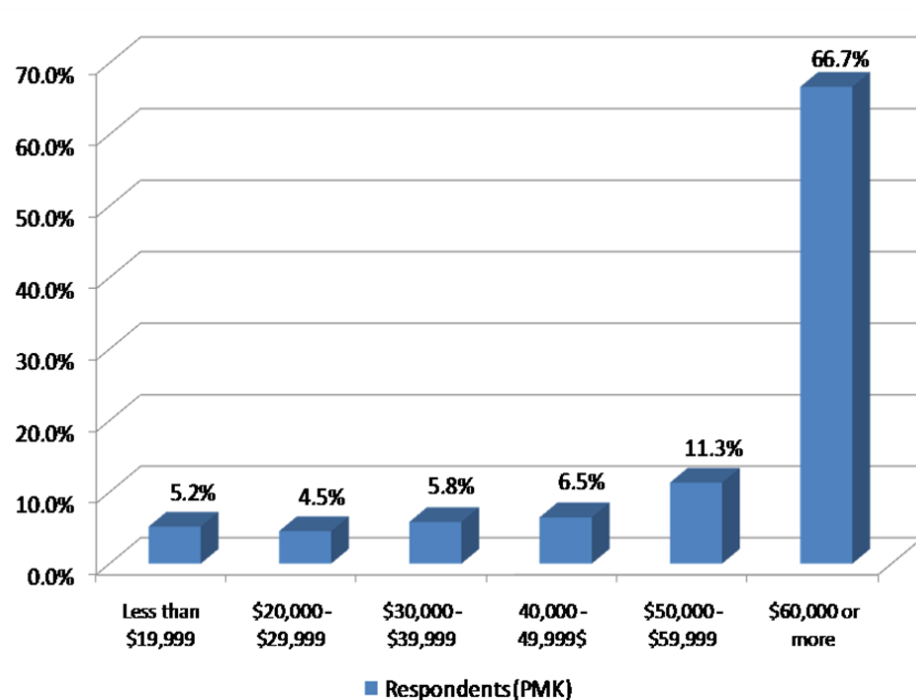
Note: Significance level: *** $\leq 1\%$.

4.2.7 Total household income

Total sample: Of the 325 respondents who took part in the baseline survey, 309 agreed to answer the question on total household income, including all sources of revenue. The response category “Less than \$10,000” was combined with the next category, that is an income between \$10,000 and \$29,999. A comparison between respondents to the question and non respondents reveals that the latter (n = 16 individuals) possess similar characteristics to respondents in terms of mother’s age at birth of target child, and household size. However, non respondents had a slightly lower level of education compared to respondents, and work less hours.³¹ The proportion of non respondents was approximately the same across experimental groups.

The median household income for the sample (n = 309) is between \$50,000 and \$59,999. The Readiness to Learn project sample was therefore generally more affluent. Exactly two thirds of respondents report a household income of \$60,000 or more. Figure 4.4 shows the overall distribution of household income.

Figure 4.4: Total household income



³¹ For the mothers who did not respond.

Experimental groups: Examination of Table 4.10 yields no significant differences between experimental groups for income categories (X^2 (12, N = 325) = 5.329, $p > 0.05$). The groups are therefore homogenous in terms of income, which is a desirable condition for a non-random experiment.

Table 4.10: Categories of household income by experimental group

<i>Experimental group</i> <i>Income category</i>	<i>Program group (G1)</i> <i>n (%)</i>	<i>Formal daycare comparison group (G2)</i> <i>n (%)</i>	<i>Informal care comparison group (G3)</i> <i>n (%)</i>	<i>TOTAL</i> <i>n (%)</i>	<i>Significant differences between the groups</i> <i>Chi square</i>
Less than \$29,999	7 (2.3)	13 (4.2)	10 (3.2)	30 (9.7)	No
Between \$30,000 and \$39,999	6 (1.9)	6 (1.9)	6 (1.9)	18 (5.8)	
Between \$40,000 and \$49,999	6 (1.9)	8 (2.6)	6 (1.9)	20 (6.5)	
Between \$50,000 and \$59,999	10 (3.2)	12 (3.9)	13 (4.2)	35 (11.3)	
\$60,000 or more	78 (25.2)	71 (23.0)	57 (18.4)	206 (66.7)	
TOTAL	107 (34.6)	110 (35.6)	92 (29.8)	309 (100)	

4.2.8 Parents' language profile

Section I of the baseline survey ended with a series of questions on official languages (questions from the SVOLM) designed to provide a language profile of parents. Together, these variables give an idea of the linguistic environment surrounding the child at home. The presence of families with a third language required modifications to be made to answer choices for certain questions, which meant that certain precautions had to be taken before these variables could be compared with Statistics Canada variables.

There are currently two definitions for the Canadian francophone population. According to Statistics Canada,³² we can calculate the percentage of the population who report French as their mother tongue, i.e., the first language learned and still understood. The second method is to calculate the “first official language spoken” (FOLS), a score that considers knowledge of both official languages, mother tongue and the language most often spoken in the home (Forgues and Landry, 2006). Below are the main results for the language profiles of participating families.

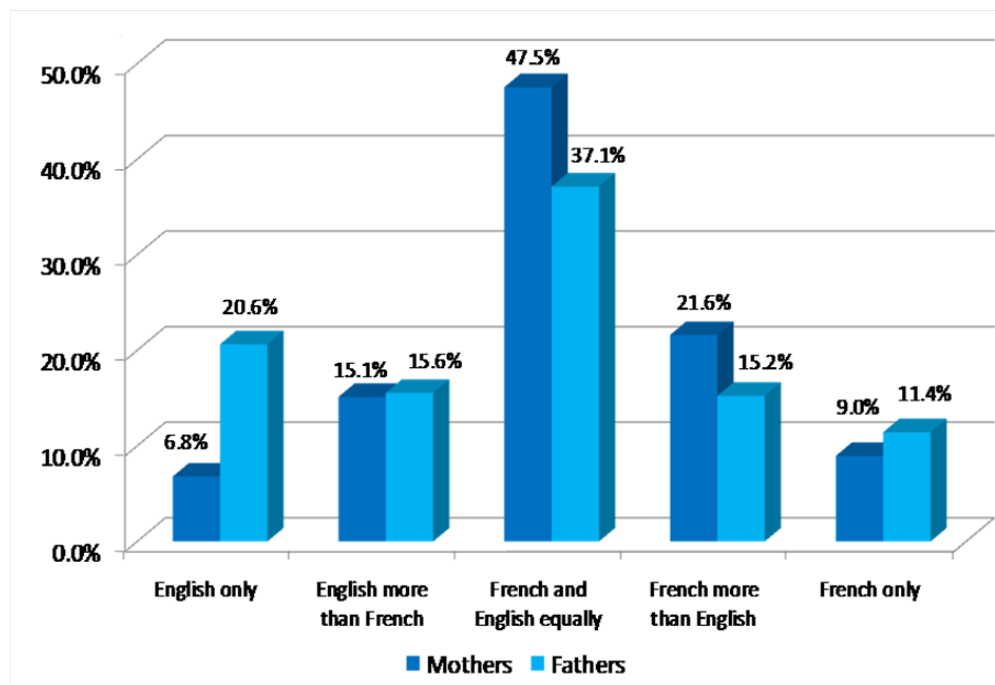
Knowledge of official languages

Total sample: Knowledge of official languages means the ability to hold a conversation in one language or the other. In the information collected on the 324 mothers and 315 fathers (Figure 4.5):

³² The definition of the francophone population is available on the Statistics Canada web site: <http://www.statcan.gc.ca/concepts/definitions/language-langue-eng.htm>

- 93.2% of mothers and 80% of fathers know enough French to have a conversation.
- 91% of mothers and 88.6% of fathers can have a conversation in English.
- Mothers report knowing French more frequently than fathers, even though there are more fathers who speak French only.
- There are more unilingual anglophone fathers than mothers.

Figure 4.5: Results of analyses on official languages known enough to hold a conversation



Experimental groups: A Chi square test done to compare mothers' and fathers' knowledge of official languages in the three experimental groups resulted in too many cells with less than five cases. For comparative purposes, knowledge of the parents' language was combined into three categories:

- English only;
- French and English, including equal knowledge of English and French OR English more than French OR French more than English;
- French only.

Table 4.11 presents comparisons across experimental groups. Results for mother's speaking "English only" cannot be reported because several cells had less than five cases. However, findings showed no significant differences between mothers' across experimental groups ($X^2(4, N = 324) = 7.26, p > 0.05$). Findings demonstrated more fathers in G3 knew French only compared to fathers in G1 ($X^2(4, N = 315) = 20.24, p < 0.001$). There were also three times as many fathers in G1 who report knowing English only than in G3.

Table 4.11: Results of analyses on official languages known sufficiently by the parents to hold a conversation, by experimental group

<div>Experimental groups</div> <div><i>Knowledge of official languages</i></div>	<i>Program group (G1)</i> <i>n (%)</i>	<i>Formal daycare comparison group (G2)</i> <i>n (%)</i>	<i>Informal care comparison group (G3)</i> <i>n (%)</i>	<i>TOTAL</i> <i>n (%)</i>	<i>Significant differences between the groups?</i> <i>Chi square</i>
<i>Mothers</i>					
English only	–	–	–	–	No
French and English	98 (32.5)	92 (30.5)	83 (27.5)	273 (90.4)	
French only	5 (1.7)	12 (4.0)	12 (4.0)	29 (9.6)	
TOTAL	103 (34.1)	104 (34.4)	95 (31.5)	302 (100)	
<i>Fathers</i>					
English only	36 (11.4)	17 (5.4)	12 (3.8)	65 (20.6)	Yes***
French and English	69 (21.9)	75 (23.8)	70 (22.2)	214 (67.9)	
French only	5 (1.6)	15 (4.8)	16 (5.1)	36 (11.4)	
TOTAL	110 (34.9)	107 (34.0)	98 (31.1)	315 (100)	

Note: Significance level: *** $\leq 1\%$.

First language learned and still known

Mother tongue refers to the *first language known and still understood*. This method of calculating the francophone population has two disadvantages: it includes individuals who are able to understand French without being able to speak it, and excludes individuals who do not consider French to be their mother tongue, but who speak French in the home or whose first official language spoken (FLOS) is French (Forgues et Landry, 2006). For comparative purposes, mother tongues have been combined into the following three categories:

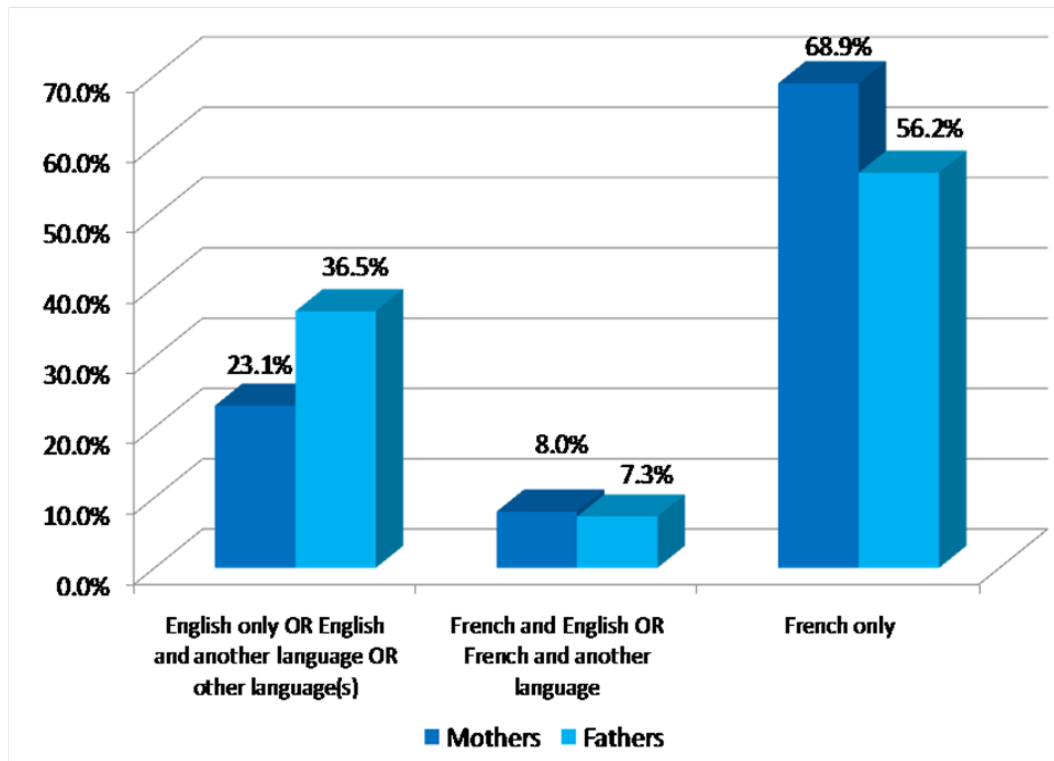
- English only OR English and another language OR other language(s);
- French and English equally OR French and another language;
- French only.

Total sample: As shown in Figure 4.6:

- 76.9% of mothers reported French as one of their mother tongues. According to the above definition, these mothers are Francophones;
- 63.5% of fathers reported French as one of their mother tongues. According to the above definition, these fathers are Francophones;
- A higher percentage of mothers reported French only as their mother tongue compared to fathers;

- More fathers reported English only (or English and another language) than mothers as their mother tongue(s).

Figure 4.6: Distribution of first language learned and still understood: mothers, fathers



Experimental groups: Table 4.12 shows that:

- The informal care comparison group (G3) includes fewer parents whose first language is English only compared to the other two groups.
- G1 and G2 have a comparable percentage of parents reporting two official languages as their first language.
- With respect to the mother tongue of the mothers, there was no significant difference between the three experimental groups ($X^2(4, 325) = 7.228, p > 0.05$).
- As for the fathers, there was a significant difference between experimental groups ($X^2(4, N = 315) = 16.53, p < 0.01$). Specifically, more fathers in G3 reported French only as their mother tongue than in G2. Fewer G3 fathers, compared to G1, reported English only or English and another language as their mother tongue.

Table 4.12: Results of analyses on the first language learned and still understood by parents by experimental group

<div><div>Experimental groups</div><div>1st language learned and understood</div></div>	<div>Program group (G1)</div> <div>n (%)</div>	<div>Formal daycare comparison group (G2)</div> <div>n (%)</div>	<div>Informal care comparison group (G3)</div> <div>n (%)</div>	<div>TOTAL</div> <div>n (%)</div>	<div>Significant differences between the groups</div> <div>Chi square</div>
Mothers					
English only OR English and another language OR other language(s)	30 (9.2)	30 (9.2)	15 (4.6)	75 (23.1)	No
French and English equally OR French and another language	12 (3.7)	8 (2.5)	6 (1.8)	26 (8.0)	
French only	71 (21.8)	76 (23.4)	77 (23.7)	224 (68.9)	
TOTAL	113 (34.8)	114 (35.1)	98 (30.2)	325 (100)	
Fathers					
English only OR English and another language OR other language(s)	52 (17.8)	39 (13.4)	24 (8.2)	115 (39.4)	Yes***
French and English equally OR French and another language	–	–	–	–	
French only	50 (17.1)	57 (19.5)	70 (24.0)	177 (60.6)	
TOTAL	102 (34.9)	96 (32.9)	94 (32.2)	292 (100)	

Note: Significance level: *** ≤ 1 %.

First official language spoken (FOLS)

This derived variable, used by Statistics Canada to define the francophone population, is made up of three items: the first language learned and still understood (mother tongue), knowledge of both official languages and the language most often spoken in the home. According to Forgues and Landry (2006, p. 1), it is calculated as follows:

- 1) If a person knows French only, their FOLS is French;
- 2) If a person knows French and English and French is their mother tongue, then their FOLS is French;
- 3) If a person's mother tongue is both French and English or neither of these, then the FOLS is determined by the language most often spoken in the home.

Based on this method, individuals who know French only or whose mother tongue is French fall into the “French” category for FOLS. Individuals who know English only or whose mother tongue is English only fall into the “English” category for FOLS. Individuals who consider both

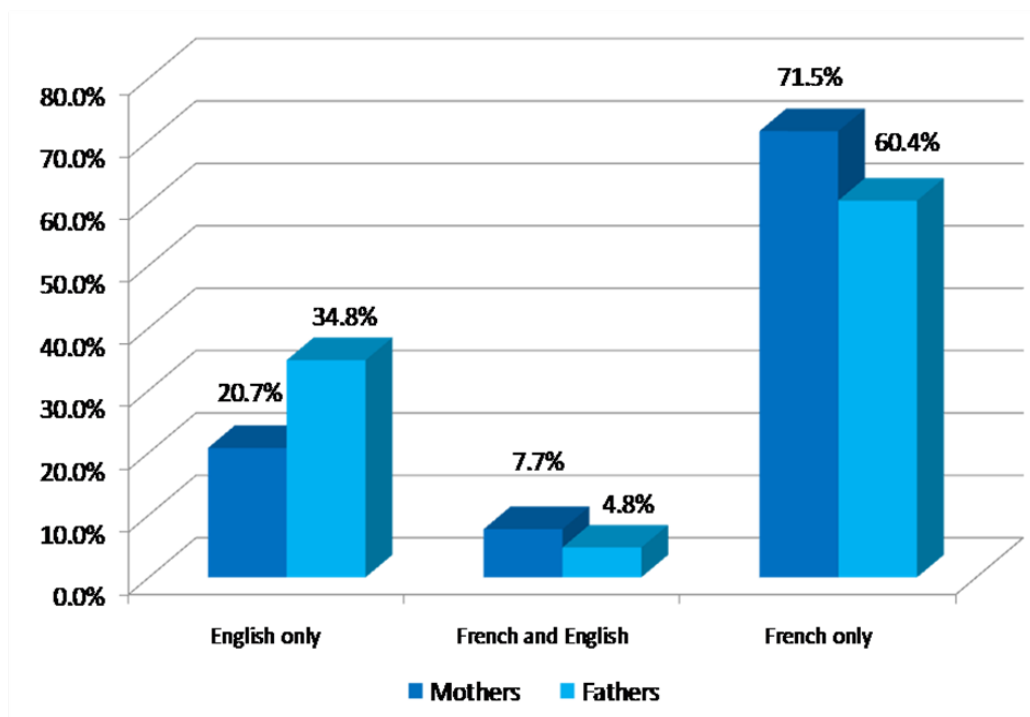
French and English as their mother tongues, and who speak both official languages most often in home fall into the “French and English” category for FOLS. Finally, an individual who does not know either of the official languages, and whose mother tongue is not an official language, falls into the “Other” category.

This method of calculating the francophone population has two advantages: it includes individuals whose mother tongue is not French, and uses two other variables to assist in classifying individuals who know both official languages. The method does have the following disadvantage: this definition excludes Francophones who consider both official languages to be their mother tongues, and who speak English in the home, as is often the case in a linguistic minority situation. This definition therefore excludes many of the children of “*ayants droit*”³³ raised in exogamous homes (Forgues and Landry, 2006).

Total sample: Examination of Figure 4.7 reveals a comparable distribution of mother tongues between mothers and fathers:

- 71.5% of mothers reported French only as the first official language spoken; according to the above definition, these mothers are Francophones;
- 60.4% of fathers reported French only as the first official language spoken; according to the above definition, these fathers are Francophones.

Figure 4.7: Distribution of first official language spoken (FOLS): mothers, fathers



³³ As per section 23 of the *Canadian Charter of Rights and Freedoms*.

Experimental groups: There were no differences between experimental groups for mothers ($X^2(4, N = 323) = 6.898, p > 0.05$) as shown in Table 4.13. However, we observe a significantly larger number of G1 fathers whose FOLS is English only compared to G3 fathers ($X^2(4, N = 313) = 14.247, p = 0.007$).

Table 4.13: Results of analyses on the first official language spoken (FOLS) by the parents and by experimental group

<i>Experimental groups</i> <i>First official language spoken</i>	<i>Program group (G1)</i> <i>n (%)</i>	<i>Formal daycare comparison group (G2)</i> <i>n (%)</i>	<i>Informal care comparison group (G3)</i> <i>n (%)</i>	<i>TOTAL</i> <i>n (%)</i>	<i>Significant differences between the groups</i> <i>Chi square</i>
<i>Mothers</i>					
English only	27 (8.4)	27 (8.4)	13 (4.0)	67 (20.7)	No
French and English	11 (3.4)	8 (2.5)	6 (1.9)	25 (7.7)	
French only	73 (22.6)	78 (24.1)	80 (24.8)	231 (71.5)	
<i>TOTAL</i>	111 (34.4)	113 (35.0)	99 (30.7)	323 (100)	
<i>Fathers</i>					
English only	50 (16.0)	38 (12.1)	21 (6.7)	109 (34.8)	Yes
French and English	5 (1.6)	5 (1.6)	5 (1.6)	15 (4.8)	
French only	53 (16.9)	64 (20.4)	72 (23.0)	189 (60.4)	
<i>TOTAL</i>	108 (34.5)	107 (34.2)	98 (31.3)	313 (100)	

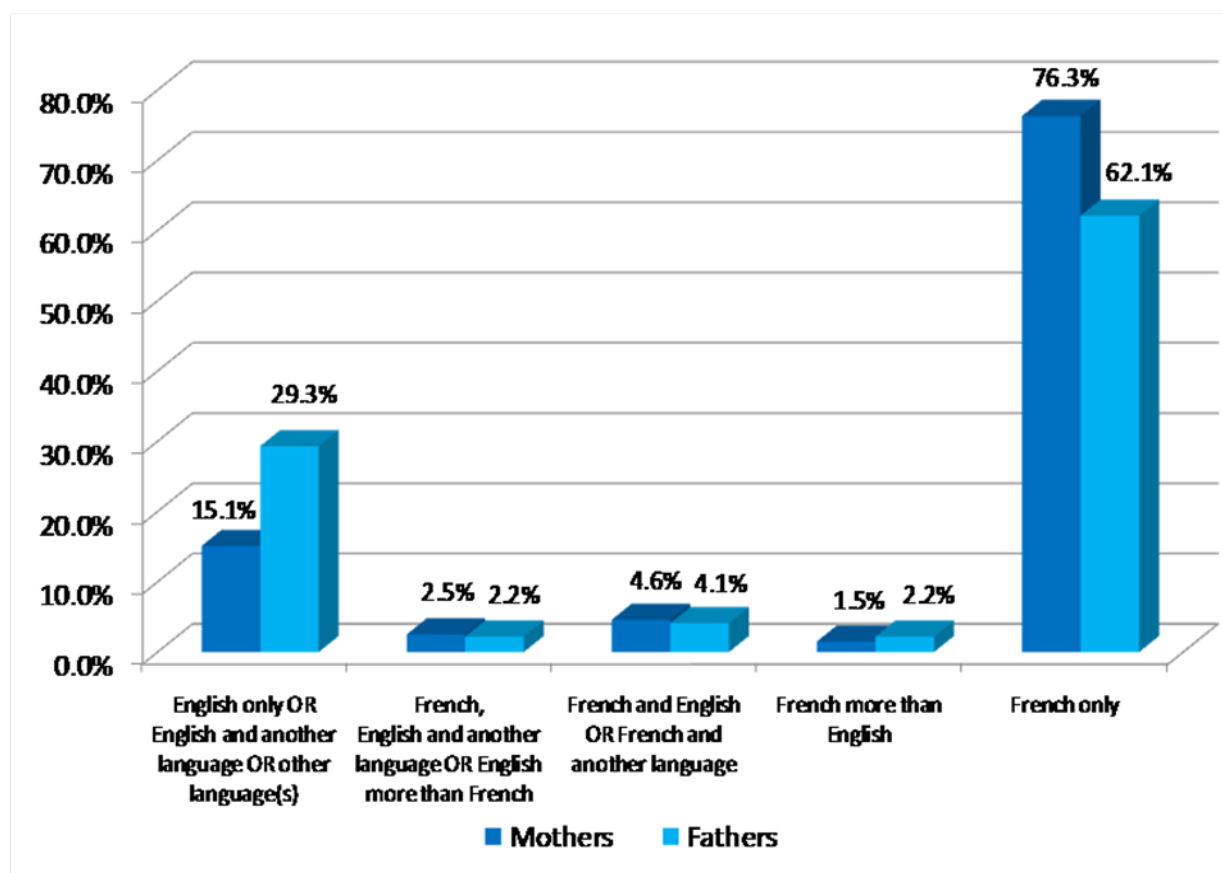
Note: The “other” category was removed due to cells with less than five cases.

Language(s) of instruction used at elementary school

The language of instruction used at elementary school is not included in the definitions relating to the francophone population. This variable could, however, be examined in relation to the languages used by the parents, to determine whether a certain degree of assimilation has taken place; this is a research question outside of the scope of this study.

Total sample: For analysis purposes, the nine original categories were modified into five new categories. We can see in Figure 4.8 that the majority of parents were taught in French only during elementary school, or were taught more in French than in English. It appears that a greater number of mothers than fathers were taught in French during elementary school. Conversely, a greater number of fathers were taught in English during elementary school.

Figure 4.8: Distribution of language(s) of instruction at elementary school: mothers, fathers



Experimental groups: For comparative analysis purposes, the language(s) of instruction at elementary school have been combined into the following three categories:

- English only OR English and another language OR other language(s);
- French, English and another language OR English more than French OR French and English equally OR French and another language OR French more than English (this category has been identified as ‘French and English’);
- French only.

Table 4.14 shows:

- (Slightly significant) differences between mothers in the three experimental groups: more mothers in G1 were taught in English only, or English and another language, or another language only during elementary school compared to the other groups, and fewer mothers in G3 were taught in English and French compared to the other groups ($X^2 (4, N = 325) = 9.512, p < 0.05$). It is impossible to report the latter results since some cells had less than five cases;
- There is a significantly smaller number of fathers in G1 who were taught in French only during elementary school compared to G2 and G3; and a significantly larger

number of fathers in G1 who were taught in English only, or English and another language, or another language only, compared to fathers in G2 and G3 ($X^2(4, N = 314) = 13.23, p < 0.01$).

Table 4.14: Results of analyses on language(s) of instruction used at elementary schools attended by the parents, by experimental group

<i>Experimental groups</i> <i>1st language taught at elementary school</i>	<i>Program group (G1)</i> <i>n (%)</i>	<i>Formal daycare comparison group (G2)</i> <i>n (%)</i>	<i>Informal care comparison group (G3)</i> <i>n (%)</i>	<i>TOTAL</i> <i>n (%)</i>	<i>Significant differences between the groups</i> <i>Chi square</i>
Mothers					
English only OR English and another language OR other language(s)	22 (7.4)	16 (5.4)	11 (3.7)	49 (16.5)	Yes**
French and English	–	–	–	–	
French only	78 (26.3)	86 (29.0)	84 (28.3)	248 (83.5)	
TOTAL	100 (33.7)	102 (34.3)	95 (32.0)	297 (100)	
Fathers					
English only OR English and another language OR other language(s)	43 (13.7)	29 (9.2)	20 (6.4)	92 (29.3)	Yes***
French and English	13 (4.1)	7 (2.2)	7 (2.2)	27 (8.6)	
French only	54 (17.2)	71 (22.6)	70 (22.3)	195 (62.1)	
TOTAL	110 (35.0)	107 (34.1)	97 (30.9)	314 (100)	

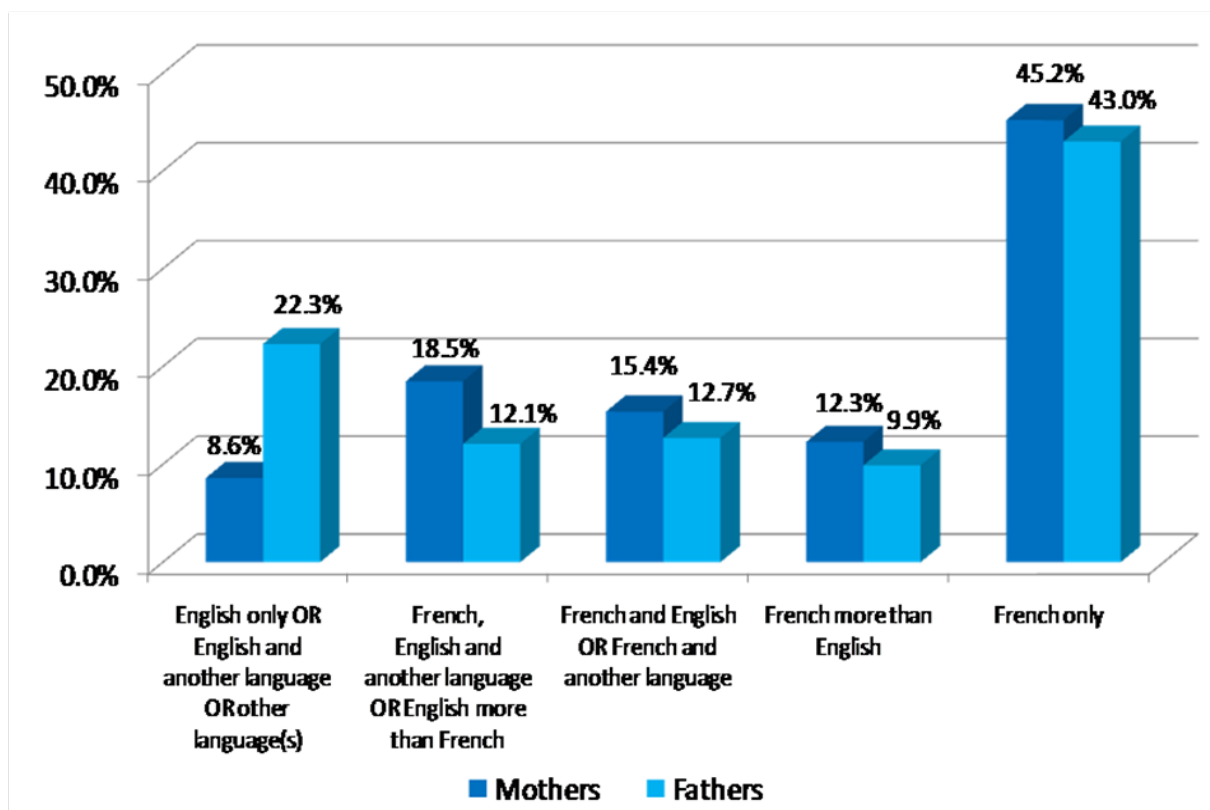
Note: Significance level: *** $\leq 1\%$; ** $\leq 5\%$.

Languages spoken most often in the home

This variable concerns the language(s) spoken most often at home by the parents of the target child. According to Forgues and Landry (2006, p. 5), this variable is connected to passing on the French language and vitality in the home, in that: “The language spoken most often at home is the measure that serves as an index of linguistic continuity or its complement— linguistic assimilation.”. Moreover, it can be used to calculate the degree of French language and culture introduced into in the home/daycare, which will eventually be taken into account in analyses.

Total sample: Figure 4.9 reflects previously found results. We find a greater number of fathers, compared to mothers, speaking English only or English and another language in the home.

Figure 4.9: Distribution of languages spoken most often in the home: mothers, fathers



Experimental groups: For comparative analysis purposes, the languages spoken in the home have been combined into the following three categories:

- English only OR English and another language OR other language(s);
- French, English and another language OR English more than French OR French and English equally OR French and another language OR French more than English (this category has been identified as “French and English”);
- French only.

As presented in Table 4.15:

- There are significant differences between groups for mothers ($X^2(4, N = 325) = 10.567, p < 0.05$) and fathers ($X^2(4, N = 314) = 11.17, p < 0.05$);
- A greater number of mothers in G1 speak English more often in the home than the mothers in the other two groups. It was impossible to report the latter results since some cells had less than five cases;
- G2 and G3 have the most mothers who speak French only in the home;
- G1 has the greatest number of fathers who speak English and/or another language only in the home compared to the other two experimental groups.

Table 4.15: Results of analyses on languages spoken most often in the home, by experimental group

<i>Experimental groups</i> <i>Language used most often in the home</i>	<i>Program group (G1)</i> <i>n (%)</i>	<i>Formal daycare comparison group (G2)</i> <i>n (%)</i>	<i>Informal care comparison group (G3)</i> <i>n (%)</i>	<i>TOTAL</i> <i>n (%)</i>	<i>Significant differences between the groups</i> <i>Chi square</i>
Mothers					
English only OR English and another language OR other language(s)	–	–	–	–	Yes**
French and English	55 (18.5)	54 (18.2)	41 (13.8)	150 (50.5)	
French only	42 (14.1)	52 (17.5)	53 (17.8)	147 (49.5)	
TOTAL	97 (32.7)	106 (35.7)	94 (31.6)	297 (100)	
Fathers					
English only OR English and another language OR other language(s)	35 (11.1)	20 (6.4)	15 (4.8)	70 (22.3)	Yes**
French and English	34 (10.8)	43 (13.7)	32 (10.2)	109 (34.7)	
French only	41 (13.1)	44 (14.0)	50 (15.9)	135 (43.0)	
TOTAL	110 (35.0)	107 (34.1)	97 (30.9)	314 (100)	

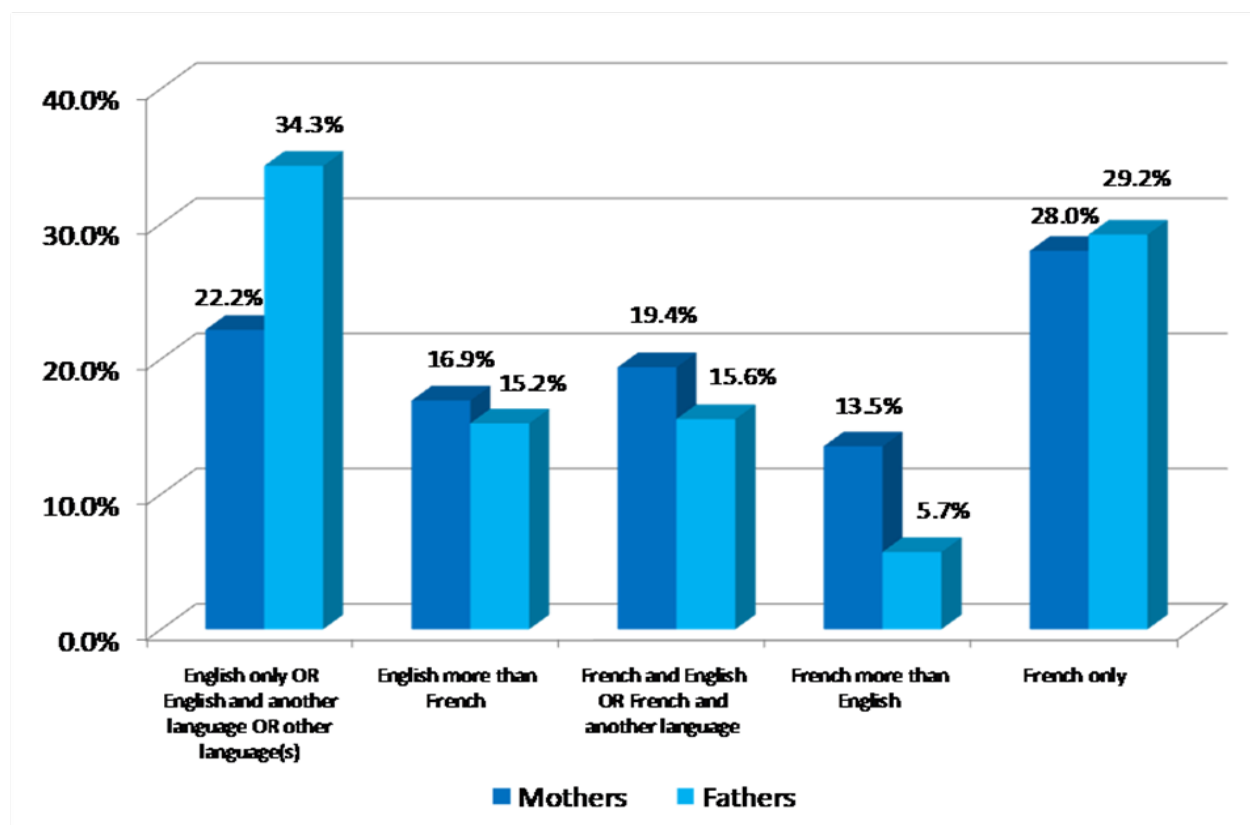
Note: Significance level: ** $\leq 5\%$.

Languages spoken with friends

This question pertains to the languages spoken by the parents of the target child outside of the home, with their friends. The goal is to obtain information on the languages used by parents outside of a working environment, or the languages used when receiving services (these questions were asked later in the survey).

Total sample: Figure 4.10 illustrates the distribution for mothers and fathers. We can see that fathers speak English only (or another language) with their friends more often than mothers do. We can also observe a higher percentage of mothers speaking French only, or more French than English, with their friends, compared to the fathers.

Figure 4.10: Distribution of languages spoken outside of the home, with friends: mothers, fathers



Experimental groups: For comparative analysis purposes, the languages spoken outside of the home with friends have been combined into the following three categories:

- English only OR English and another language OR other language(s);
- French, English and another language OR English more than French OR French and English equally OR French and another language OR French more than English (this category has been identified as “French and English”);
- French only.

Table 4.16 presents a comparison between the experimental groups for languages spoken with friends outside of the home. We observed that:

- Significant differences exist between the groups when we compare mothers ($X^2(4, N = 325) = 11.67, p < 0.01$) and fathers ($X^2(4, N = 315) = 15.37, p < 0.01$).
- The parents (fathers and mothers) in G1 use more English in their communications with friends than the parents in the other two groups.
- Approximately one third of the mothers and fathers in G2 and G3 use French only in their communications with friends.
- In comparison to the language spoken at home, we observed a major drop in the number of parents who claimed to speak French only. The fact that the community is

in a minority setting increases the probability that the friends will speak English, which no doubt explains this difference.

Table 4.16: Results of analyses on languages spoken outside of the home with friends

<i>Experimental groups</i> <i>Language used with friends</i>	<i>Program group (G1)</i> <i>n (%)</i>	<i>Formal daycare comparison group (G2)</i> <i>n (%)</i>	<i>Informal care comparison group (G3)</i> <i>n (%)</i>	<i>TOTAL</i> <i>n (%)</i>	<i>Significant differences between the groups</i> <i>Chi square</i>
Mothers					
English only OR English and another language OR other language(s)	31 (9.5)	26 (8.0)	15 (4.6)	72 (22.2)	Yes**
French and English	62 (19.1)	53 (16.3)	47 (14.5)	162 (49.8)	
French only	20 (6.2)	35 (10.8)	36 (11.1)	91 (28.0)	
TOTAL	113 (34.8)	114 (35.1)	98 (30.2)	325 (100)	
Fathers					
English only OR English and another language OR other language(s)	47 (14.9)	40 (12.7)	21 (6.7)	108 (34.3)	Yes***
French and English equally OR French and another language	42 (13.3)	34 (10.8)	39 (12.4)	115 (36.5)	
French only	21 (6.7)	33 (10.5)	38 (12.1)	92 (29.2)	
TOTAL	110 (34.9)	107 (34.0)	98 (31.1)	315 (100)	

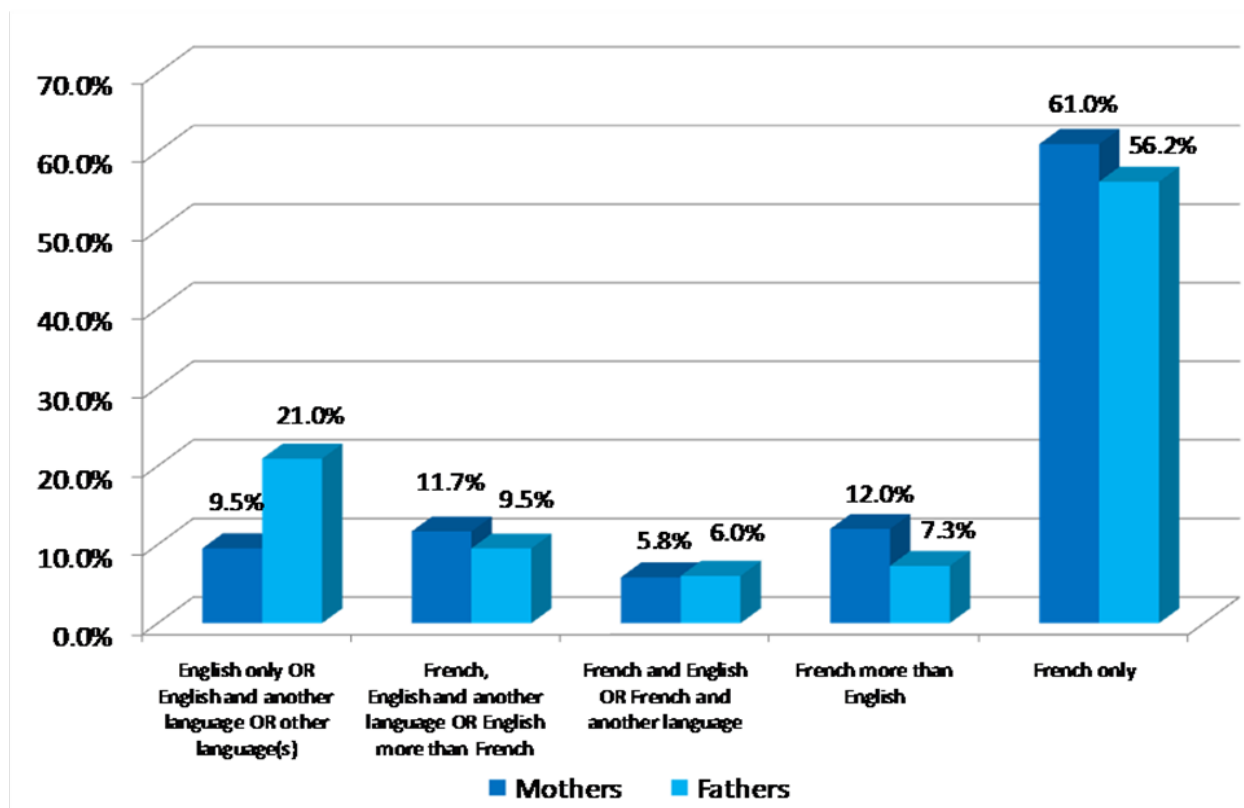
Note: Significance level: *** $\leq 1\%$; ** $\leq 5\%$.

Languages spoken with the child

This variable is without a doubt the most important in the parents' language profile since it is directly related to the child's French language development.

Total sample: Slightly more than half of mothers (61%) and fathers (56%) only speak French to their child (see Figure 4.11). However, compared to mothers, twice as many fathers speak English only (or English and another language, or another language only) to their child. These results are consistent with those obtained through other variables that measure the family's language profile.

Figure 4.11: Distribution of languages spoken with the child: mothers, fathers



Experimental groups: For comparative analysis purposes, the languages spoken by the parents with the child have been combined into the following three categories:

- English only OR English and another language OR other language(s);
- French, English and another language OR English more than French OR French and English equally OR French and another language OR French more than English (this category has been identified as “French and English”);
- French only.

The main conclusion that can be drawn from Table 4.17 is that the mothers in G3 tend to speak French only with their children more than the mothers in G1 ($X^2(4, N = 325) = 10.78, p < 0.01$). We can also observe that fathers in G3 tend to speak French only with their children more than the fathers in the other two experimental groups; this difference is even more pronounced with G1 ($X^2(4, N = 315) = 21.41, p < 0.001$).

Table 4.17: Results of analyses on the languages spoken with the target child

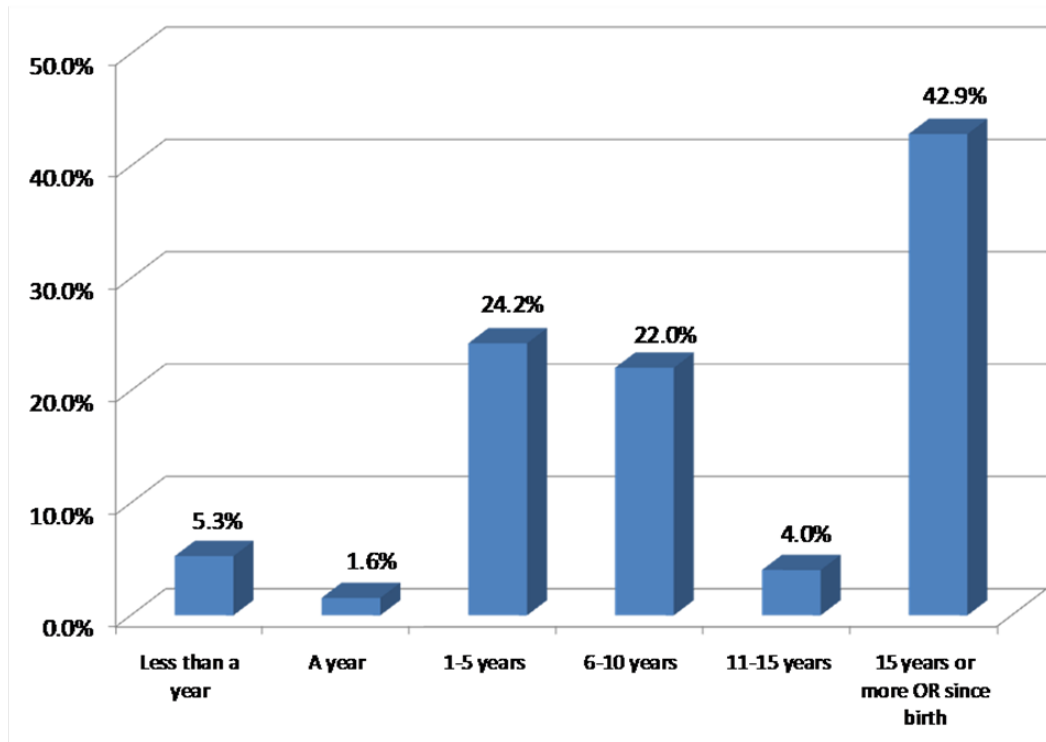
<i>Experimental groups</i>	<i>Program group (G1)</i>	<i>Formal daycare comparison group (G2)</i>	<i>Informal care comparison group (G3)</i>	<i>TOTAL</i>	<i>Significant differences between the groups</i>
<i>Language spoken with the target child</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	<i>Chi square</i>
Mothers					
English only OR English and another language OR other language(s)	16 (4.9)	9 (2.8)	6 (1.8)	31 (9.5)	Yes**
French and English	38 (11.7)	37 (11.4)	21 (6.5)	96 (29.5)	
French only	59 (18.2)	68 (20.9)	71 (21.8)	198 (61.0)	
TOTAL	113 (34.8)	114 (35.1)	98 (30.1)	325 (100)	
Fathers					
English only OR English and another language OR other language(s)	37 (11.7)	17 (5.4)	12 (3.8)	66 (21.0)	Yes***
French and English	23 (7.3)	31 (9.8)	18 (5.7)	72 (22.9)	
French only	50 (15.9)	59 (18.7)	68 (21.6)	177 (56.2)	
TOTAL	110 (34.9)	107 (34.0)	98 (31.1)	315 (100)	

Note: Significance level: *** $\leq 1\%$; ** $\leq 5\%$.

4.2.9 Number of years spent in the community

Total sample: The final variable in the socio-demographic information section of the baseline survey is the number of years that the PMK has spent in the community. This variable's mode was "More than 15 years OR I was born here"; hence, the sample included participants who had been living in the community for a long time, or had been born there. Note that the question specified not to count time spent outside of the community for education or other reasons. We observed, however, that despite the large number of participants who were born in their community (or had spent many years living in it), close to a third of the sample had been living in the community for five years or less (see Figure 4.12).

Figure 4.12: Number of years the PMK has spent in the community



Experimental groups: A Chi square test did not reveal significant differences between the experimental groups in terms of the number of years spent in the community ($X^2(10, N = 322) = 16.482, p > 0.05$). It was impossible to report frequencies by group due to the high number of cells with less than five cases. It must be stated, however, that of the 138 participants who reported having lived in the community for more than 15 years or having been born there, many were in G2 and G3.

4.3 SECTION II: PARENT-CHILD INTERACTIONS

The purpose of this section is to establish a profile of the quality of interactions between the PMK and his/her child, and to determine whether there are differences between the experimental groups. Two scales of parenting styles were included in the baseline survey, measuring positive interactions and an authoritative style used with the child. The PMK then answered questions on the languages used by the child when communicating with friends and members of the family. Finally, the PMK was asked questions on the frequency of literacy activities and the languages in which these activities took place.

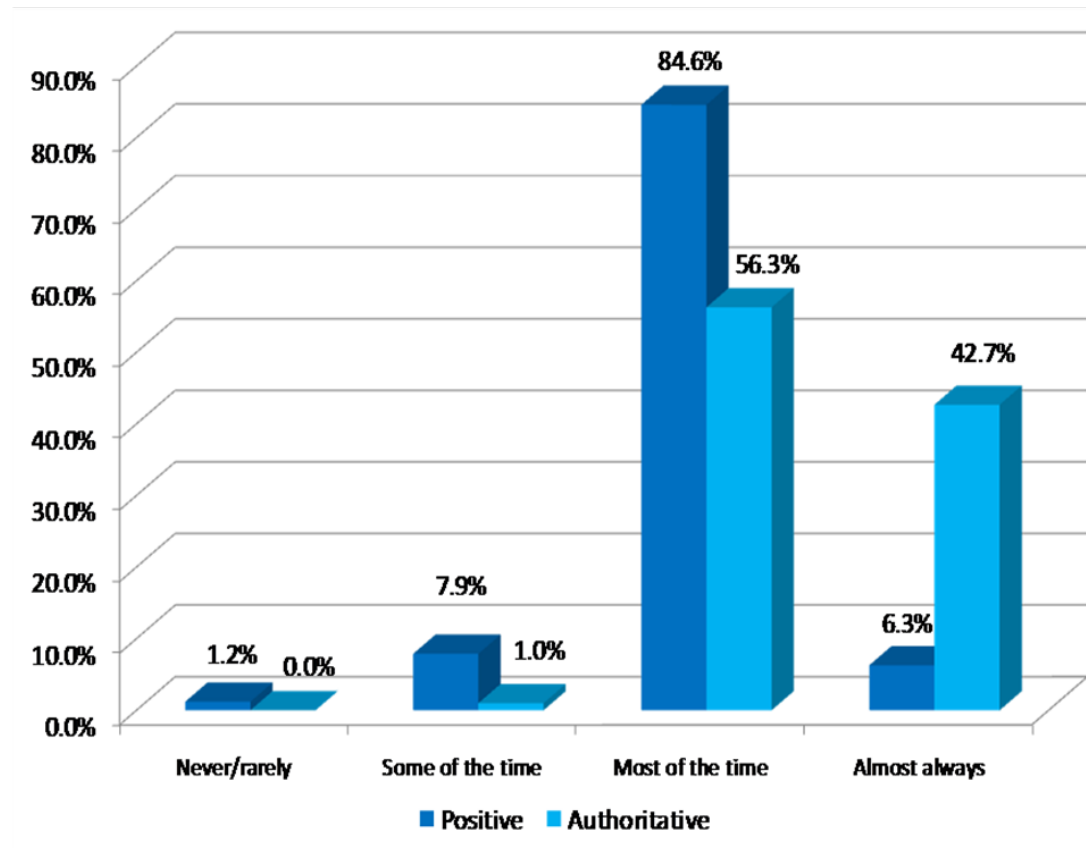
Before calculating the scores for each of the scales, we performed factorial analyses which enabled us to confirm whether there was a factor for each scale, i.e. *a single construct truly being measured*. If an item did not contribute to enhancing the measurement of internal validity (*Cronbach alpha*), the item was not retained in the final calculation of the score. Therefore, the number of items included in the calculation does not necessarily correspond to the number of items that initially appeared in the baseline survey. In addition, only the scores of respondents

who answered all of the questions relating to the items retained in the final factorial solution were kept for analysis purposes. In cases where more than 10% of respondents did not have a score on a scale, further analysis was conducted into the response and non-response patterns to clarify interpretation of the results.

4.3.1 Parenting practices

Total sample: The majority of PMKs (90.9%) indicated that they used positive parenting practices most of the time, or almost always ($M = 4.47$, $SD = 0.36$). No respondents reported that they never or rarely used these strategies. With respect to authoritative parenting practices, most parents (99.0%) reported using these strategies most of the time, or almost always ($M = 3.40$, $SD = 0.34$). No analysis was performed on the scale measuring empowerment due to its weak psychometric properties. The frequency of use of parenting practices reported by the PMK is presented in Figure 4.13.

Figure 4.13: Frequency of use of parenting practices reported by the PMK



Experimental groups: The results of comparative analyses show that there are no significant differences between the experimental groups in terms of the frequency of use of positive parenting practices [$F(2, 316) = 0.33$, $p > 0.05$] or authoritative parenting practices [$F(2, 299) = 2.44$, $p > 0.05$]. It should be noted that the answers to questions relating to the positive parenting practices scale have been presented on a 5-point scale where 1 = “Never”; 3 = “Some of the

time”; and 5 = “Almost always”. The answers to questions measuring the frequency of authoritative practices were noted on a 4-point scale, where 1 = “Never/rarely”; and 4 = “Almost always”. In both cases, higher scores indicated a greater use of the strategies. The mean scores for parenting practices are presented in Table 4.18.

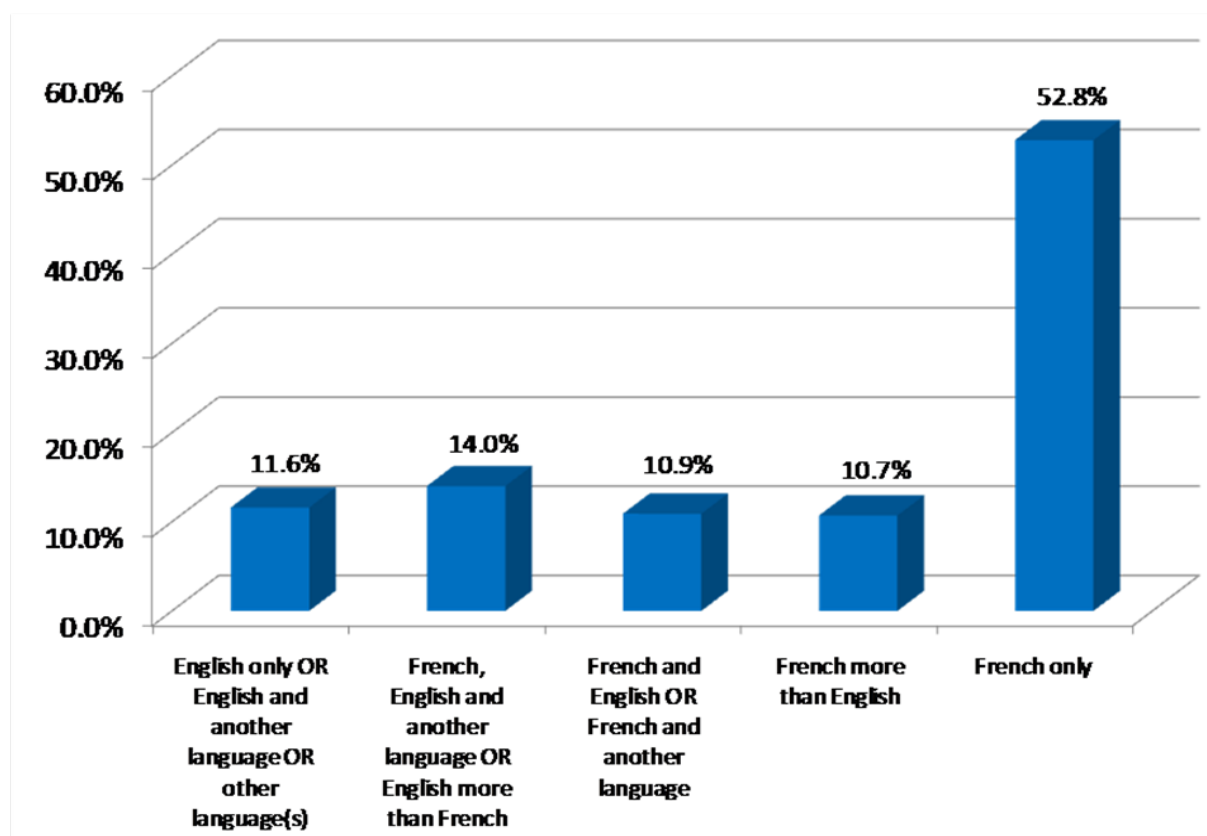
Table 4.18: Analysis of the variance (ANOVA) in parenting practices between the experimental groups

<i>Experimental groups</i>	<i>Program group (G1)</i>	<i>Formal daycare comparison group (G2)</i>	<i>Informal care comparison group (G3)</i>	<i>Total sample</i>	<i>Significant differences between the groups?</i>
<i>Scales</i>	<i>Mean score (standard deviation) n</i>	<i>Mean score (standard deviation) n</i>	<i>Mean score (standard deviation) n</i>	<i>Mean score (standard deviation) n</i>	<i>F Test</i>
Parenting practices					
Positive parenting practices	4.48 (0.38) n = 108	4.45 (0.37) n = 114	4.49 (0.33) n = 97	4.47 (0.36) n = 319	No
Authoritative parenting practices	3.34 (0.33) n = 108	3.43 (0.35) n = 108	3.43 (0.32) n = 86	3.40 (0.34) n = 302	No

4.3.2 Languages used by the child

Total sample: Analyses were performed with a scale that combined languages used by the child when communicating with the PMK, his/her spouse, siblings and other children. This scale represents a linguistic continuum from 1 (English only) to 5 (French only). Approximately one half of the respondents (52.8%) indicated that the child uses French only in interactions with others, while 11.6% reported that the child uses English only and/or other languages. Figure 4.14 illustrates the languages normally used by the children.

Figure 4.14: Languages used by the child



Experimental groups: The linguistic continuum (see Figure 4.14) is based on a 5-point scale: (1) English only OR English and another language OR other languages; (3) French and English OR French and another language; and (5) French only. It follows that the higher the score, the more French is the language that is normally spoken. As observed in Table 4.19, the children in the program group use both French and English equally with their entourage significantly more than the children in the informal comparison group, who use French more than English [$F(2, 298) = 6.21, p = 0.002$].

Table 4.19: Analysis of the variance (ANOVA) in the language used by the child across the experimental groups

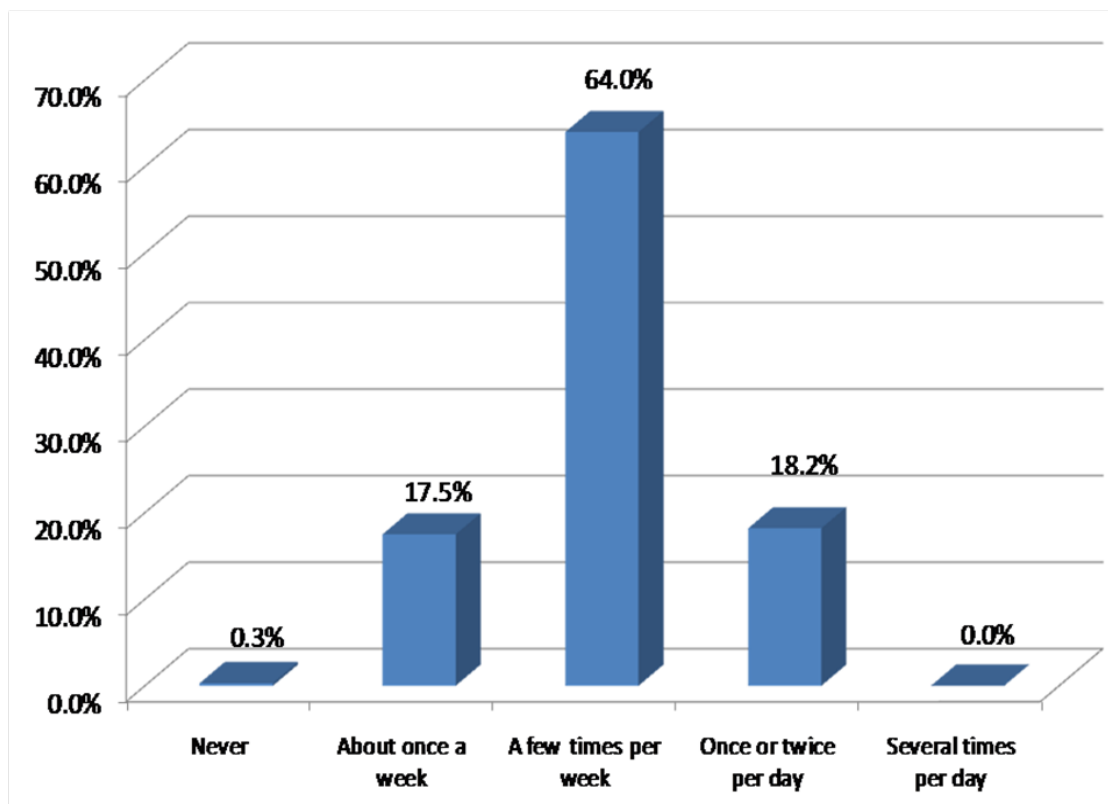
Experimental groups	Program group (G1)	Formal daycare comparison group (G2)	Informal care comparison group (G3)	Total sample	Significant differences between the groups?
	Mean score (standard deviation) n	Mean score (standard deviation) n	Mean score (standard deviation) n	Mean score (standard deviation) n	F Test
Scale					
Language used by the child	3.34 (1.57) n = 100	3.80 (1.46) n = 106	4.08 (1.40) n = 95	3.74 (1.50) n = 301	Yes G1*** < G3

Note: Significance level: *** $\leq 1\%$.

4.3.3 Literacy

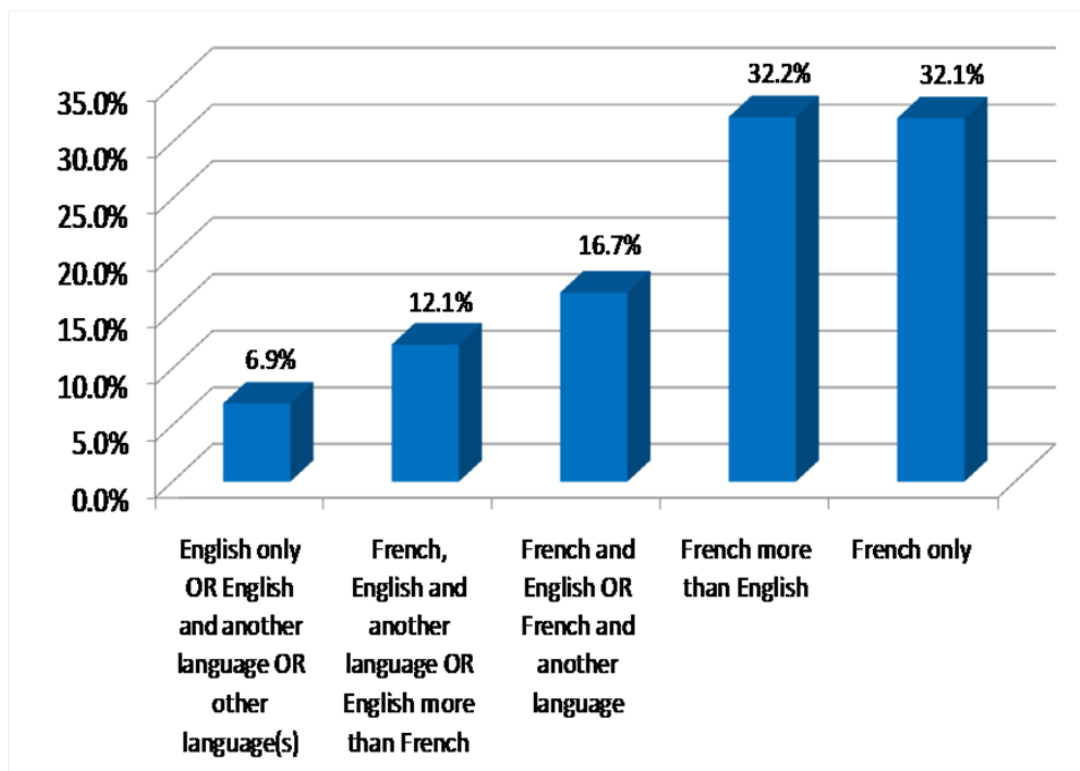
Total sample: Close to two thirds of respondents or their spouse (64%) take part in literacy activities with their child a few times per week ($M = 2.88$, $SD = 0.50$). Very few respondents (0.3%) indicated that they never take part in literacy activities with their child, while none of the respondents reported engaging in these activities several times per day (three times or more). The frequency of literacy activities reported by the PMK is presented in Figure 4.15.

Figure 4.15: Frequency of literacy activities as reported by the PMK



A linguistic continuum was created using questions that measured the languages normally used for literacy activities. This continuum is based on a 5-point scale, where 1 equals English only OR English and another language OR other languages, and 5 equals French only. Close to two thirds of respondents use French only (32.1%) or French more than English (32.2%) when participating in literacy activities with their child. Figure 4.16 illustrates the languages normally used by the PMK during literacy activities.

Figure 4.16: Languages normally used by the PMK during literacy activities



Experimental groups: Comparative analyses did not reveal any significant differences between the experimental groups with regards to the frequency of literacy activities engaged in by the PMK or his/her spouse with the child [$F(2, 311) = 1.69, p > 0.05$].

There are significant differences in terms of the language used during these literacy activities (see Table 4.20): parents in the program group use both French and English with their children more frequently, while parents in the informal care comparison group use French more than English [$F(2, 302) = 5.45, p = 0.005$]. This interpretation is based on the linguistic continuum (see Figure 4.16)—the higher the score, the more likely French is the language normally used for literacy activities.

Table 4.20: Analysis of the variance (ANOVA) in literacy activities and in the linguistic continuum across the experimental groups

<i>Experimental groups</i>	<i>Program group (G1)</i>	<i>Formal daycare comparison group (G2)</i>	<i>Informal care comparison group (G3)</i>	<i>Total sample</i>	<i>Significant differences between the groups?</i>
<i>Scales</i>	<i>Mean score (standard deviation) n</i>	<i>Mean score (standard deviation) n</i>	<i>Mean score (standard deviation) N</i>	<i>Mean score (standard deviation) n</i>	<i>F Test</i>
Literacy activities	2.89 (0.53) n = 108	2.82 (0.47) n = 111	2.95 (0.47) n = 95	2.88 (0.49) n = 314	No
Literacy linguistic continuum ³⁴	3.43 (1.27) n = 106	3.71 (1.13) n = 106	3.98 (1.08) n = 93	3.70 (1.18) n = 305	Yes G1*** < G3

Note: Significance level: *** $\leq 1\%$.

4.4 SECTION III: FAMILY PROCESSES

This section presents the results for several variables linked to family processes that were included in the baseline survey, such as constructs of social capital, social support, family functioning and depression.

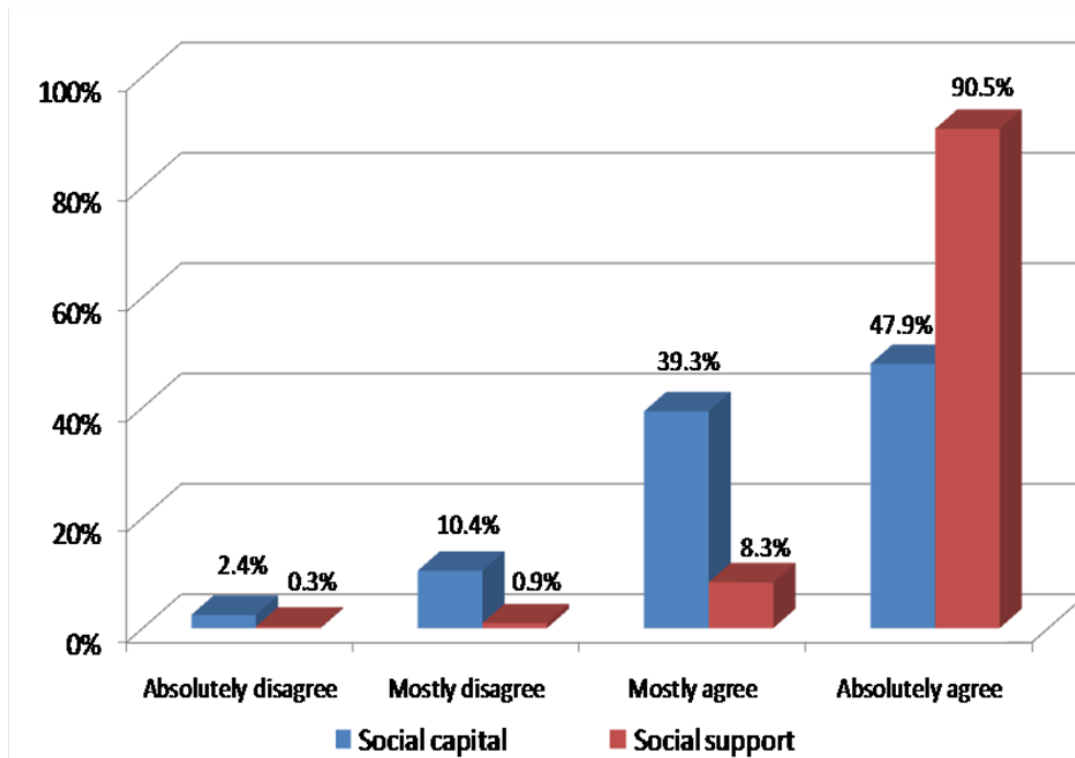
4.4.1 Social capital and social support

Total sample: Nearly half of the respondents (47.9%) reported having a very good social capital in their neighbourhood ($M = 3.34$, $SD = 0.69$). However, we noted a lower response rate for this scale compared to other scales found in this section. In fact, the response rate for the social capital scale was only 65%. A review of the response pattern reveals that a large percentage of missing data was generated by the response choice “Don’t know/refuse to answer” for one or more of the five questions that made up this scale. These results seem to indicate that a third of respondents do not know their neighbourhood very well.

Moreover, a very large percentage of respondents (90.5%) have access to very good social support ($M = 3.88$, $SD = 0.32$). PMKs indicated that they benefit from informational support, tangible assistance and emotional support. The distribution of scores obtained from the social capital and social support scales is presented in Figure 4.17.

³⁴ Note that the scale initially included nine items, and factorial analyses only allowed for five items to be retained without compromising the internal validity.

Figure 4.17: Presence of social capital and social support as reported by the PMK



Experimental groups: Comparative analyses did not reveal any significant differences between the experimental groups in terms of the degree of social capital [$F(2, 208) = 0.41, p > 0.05$] or social support [$F(2, 322) = 1.14, p > 0.05$] perceived by the PMK (see Table 4.21). Interpretation of the scores is based on a 4-point scale: (1) Absolutely disagree; (2) Mostly disagree; (3) Mostly agree; and (4) Absolutely agree. The higher the score, the more the respondent reported benefiting from greater social capital and social support (see Figure 4.17).

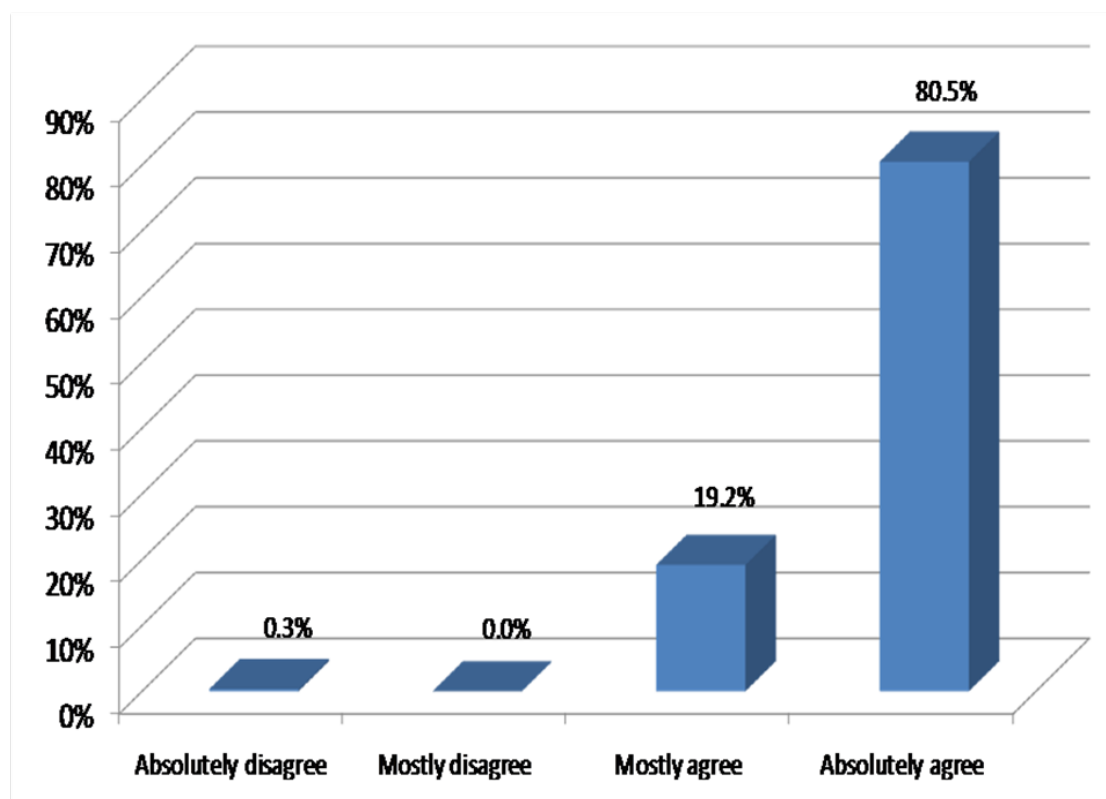
Table 4.21: Analysis of the variance (ANOVA) for social capital and social support across the experimental groups

<i>Experimental groups</i>	<i>Program group (G1)</i>	<i>Formal daycare comparison group (G2)</i>	<i>Informal care comparison group (G3)</i>	<i>Total sample</i>	<i>Significant differences between the groups?</i>
<i>Scales</i>	<i>Mean score (standard deviation) n</i>	<i>Mean score (standard deviation) n</i>	<i>Mean score (standard deviation) n</i>	<i>Mean score (standard deviation) n</i>	<i>F Test</i>
Family processes					
Social capital	3.39 (0.64) n = 73	3.34 (0.72) n = 71	3.28 (0.70) n = 67	3.34 (0.69) n = 211	No
Social support	3.85 (0.40) n = 113	3.90 (0.27) n = 114	3.91 (0.26) n = 98	3.88 (0.32) n = 325	No

4.4.2 Family functioning

Total sample: We can see in Figure 4.18 that a large percentage of respondents (80.5%) consider their family functioning to be very good ($M = 3.73$, $SD = 0.38$). Although these results are positive, they must be interpreted with caution, since they are subject to the possibility of a strong bias on the part of the respondents. The questions making up this scale related to respect, listening, trust and acceptance within the family. It is easy to conclude that there was bias in the answers, since respondents would want to look good in front of the coordinator asking the questions.

Figure 4.18: Family functioning as reported by the PMK



Experimental groups: Comparative analyses did not reveal any significant differences between the experimental groups in terms of the degree of family functioning [$F(2, 320) = 0.77$, $p > 0.05$] (see Table 4.22). Scores are to be interpreted using a 4-point scale: (1) Absolutely disagree; (2) Mostly disagree; (3) Mostly agree; and (4) Absolutely agree. The higher the score, the better the respondent viewed their family functioning (see Figure 4.18). On average, participating families all reported a satisfactory family environment.

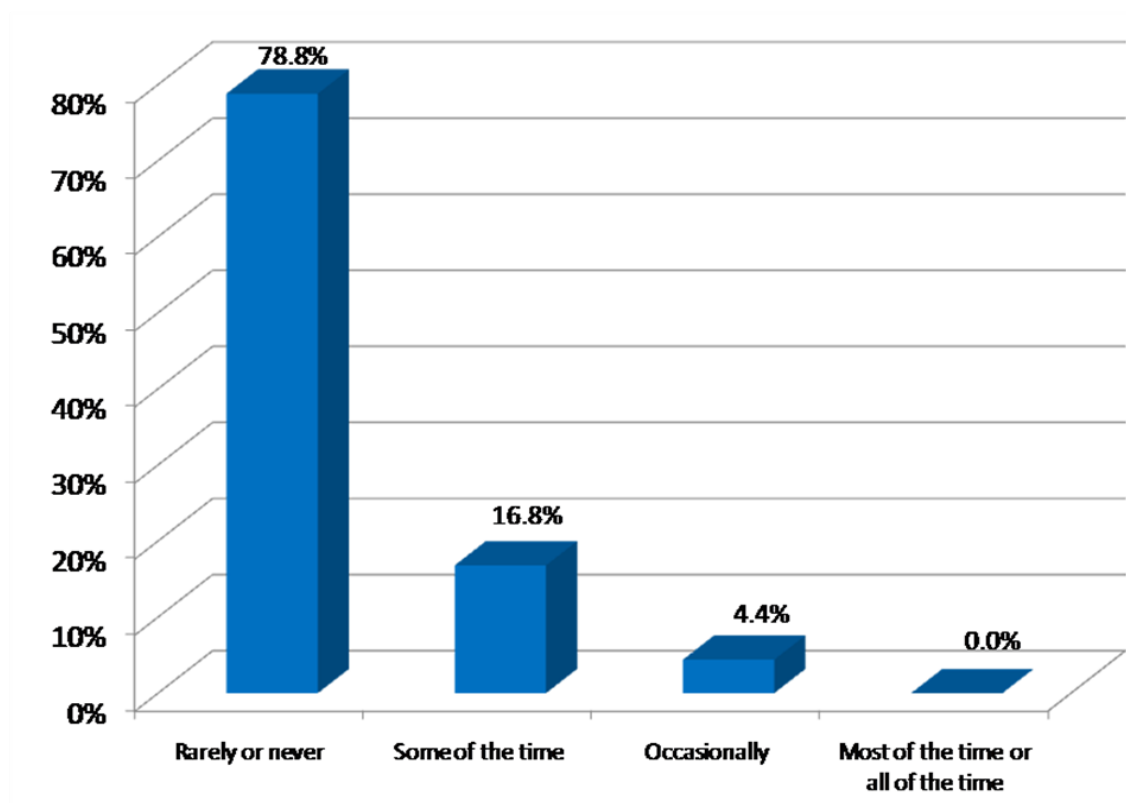
Table 4.22: Analysis of the variance (ANOVA) in family functioning across the experimental groups

<i>Experimental groups</i>	<i>Program group (G1)</i>	<i>Formal daycare comparison group (G2)</i>	<i>Informal care comparison group (G3)</i>	<i>Total sample</i>	<i>Significant differences between the groups?</i>
<i>Scale</i>	<i>Mean score (standard deviation) n</i>	<i>Mean score (standard deviation) n</i>	<i>Mean score (standard deviation) n</i>	<i>Mean score (standard deviation) n</i>	<i>F Test</i>
Family processes					
Family functioning	3.70 (0.43) n = 113	3.72 (0.36) n = 114	3.76 (0.32) n = 96	3.73 (0.37) n = 323	No

4.4.3 Depression

Total sample: We can see in Figure 4.19 that more than two thirds of respondents (78.8%) reported few or none of the symptoms indicative of depression ($M = 1.3$, $SD = 0.40$). However, caution must be taken in interpreting the results for the 9.5% of men who completed the baseline survey. The questions making up this scale refer to several behaviours that are typically less common for men than women (e.g. crying, feeling down, etc.).

Figure 4.19: Depressed mood reported by PMK



Experimental groups: Comparative analyses did not reveal any significant differences between the experimental groups in terms of depressed mood reported by the PMK [$F(2, 317) = 0.01, p > 0.05$] (see Table 4.23). Scores are to be interpreted based on a 4-point scale where 1 = “Rarely or none of the time”, 2 = “Some or a little of the time”; 3 = “Occasionally or a moderate amount of time”; and 4 = “Most or all of the time”. The higher the score, the greater the respondent’s depressed mood (see Figure 4.19).

Table 4.23: Analysis of the variance (ANOVA) in depressed moods across the experimental groups

<i>Experimental groups</i>	<i>Program group (G1)</i>	<i>Formal daycare comparison group (G2)</i>	<i>Informal care comparison group (G3)</i>	<i>Total sample</i>	<i>Significant differences between the groups?</i>
	<i>Mean score (standard deviation) n</i>	<i>Mean score (standard deviation) n</i>	<i>Mean score (standard deviation) n</i>	<i>Mean score (standard deviation) n</i>	
Scale					F Test
Family processes					
Depressed mood	1.28 (0.39) n = 108	1.29 (0.39) n = 114	1.29 (0.41) n = 98	1.29 (0.40) n = 320	No

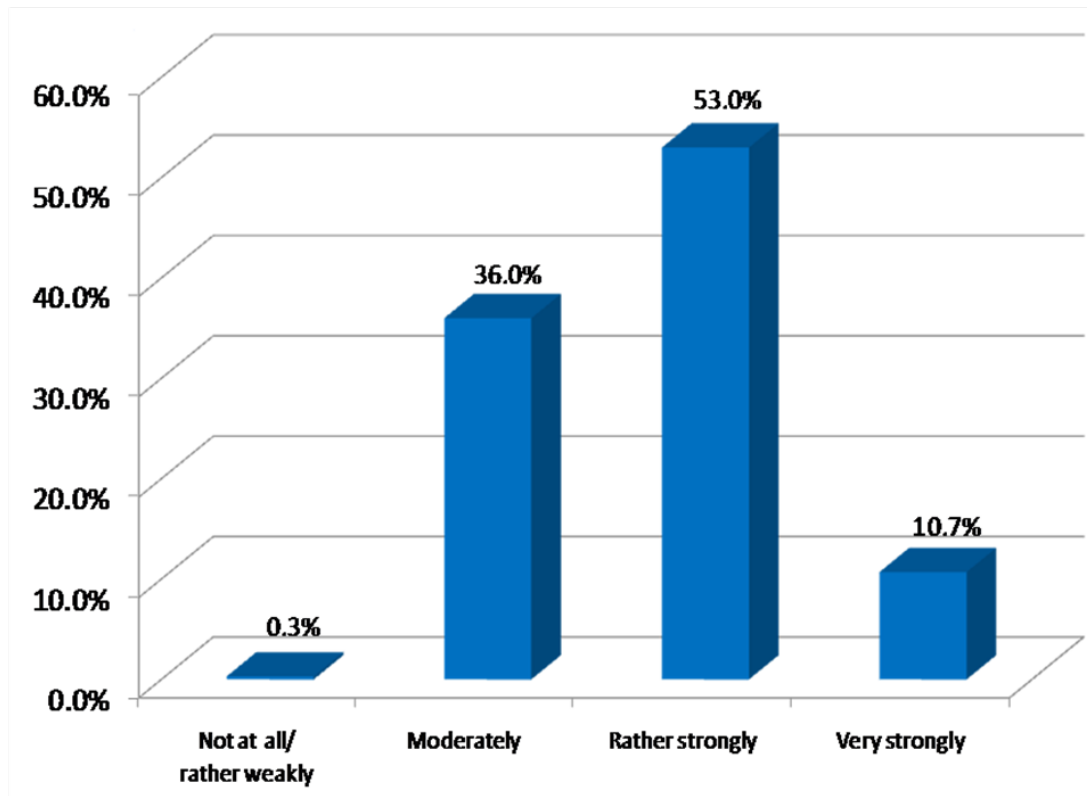
4.5 SECTIONS IV AND V: IDENTITY, ENVIRONMENT AND FRANCOPHONE COMMUNITY

The purpose of this section of the chapter is to determine whether there are differences between experimental groups with respect to factors linked to identification with and involvement in the francophone culture, using the answers to sections IV and V of the baseline survey. Section IV of the baseline survey asks the PMKs their opinion on the importance of exposing their child to both official languages, their desire to be involved in the development of the francophone community and their desire to attend French events. These three concepts are measured in a single construct: cultural involvement. Section IV of the baseline survey also includes a question on identification with one or the other linguistic group (Francophones, Anglophones or neither). Section V of the baseline survey presents the subjective results of the francophone vitality in the community and two questions on francophone presence in the community.

4.5.1 Involvement in the francophone culture

Total sample: More than half of the respondents (63.7%) consider that it is rather important or very important to preserve the francophone culture, through development of their child’s language and identity, or through their involvement in the francophone community ($M = 2.66, SD = 0.54$). Figure 4.20 presents the distribution of scores obtained on this scale.

Figure 4.20: Level of involvement in francophone culture



Experimental groups: Comparative analyses did not reveal any significant differences between the experimental groups in terms of the level of involvement in the francophone culture [$F(2, 297) = 0.39, p > 0.05$] (see Table 4.24). The scores should be interpreted using a 4-point scale where 1 = “Not at all/ Rather weakly”; 2 = “Moderately”; 3 = “Rather strongly”; and 4 = “Very strongly”. The higher the score, the greater the respondent’s level of involvement in the francophone culture (see Figure 4.20).

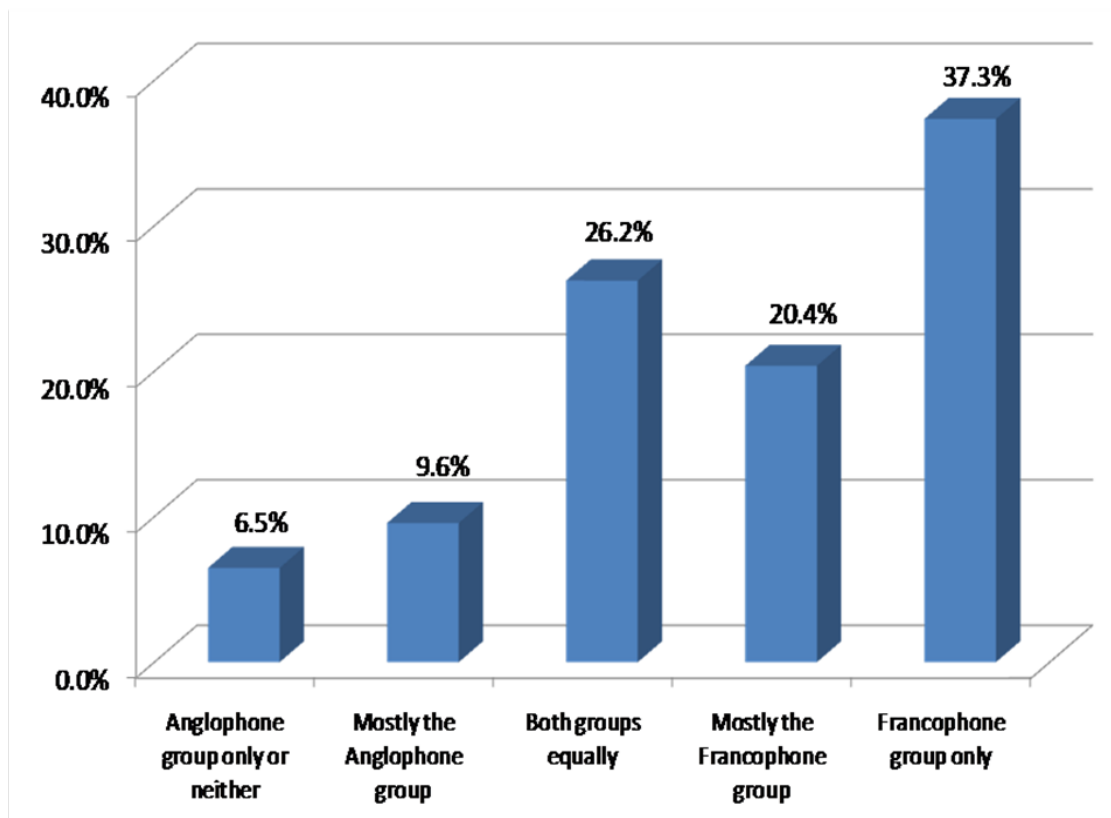
Table 4.24: Analysis of the variance (ANOVA) in the involvement in the francophone culture across the experimental groups

Experimental groups	Program group (G1)	Formal daycare comparison group (G2)	Informal care comparison group (G3)	Total sample	Significant differences between the groups?
	Mean score (standard deviation) n	Mean score (standard deviation) n	Mean score (standard deviation) n	Mean score (standard deviation) n	F Test
Scale					
Cultural involvement	2.67 (0.54) n = 105	2.63 (0.52) n = 101	2.69 (0.56) n = 94	2.66 (0.54) n = 300	No

4.5.2 Sense of belonging to linguistic communities

Total sample: Figure 4.21 shows that more than half of the respondents (57.7%) identify themselves as belonging solely or primarily to the francophone linguistic group ($M = 3.73$, $SD = 1.24$). It is interesting to note that more than half of the respondents (56.2%) identify, to varying degrees, with both Francophones and Anglophones. Among these, close to one quarter of respondents identify equally with both Francophones and Anglophones (26.2%). This result points to the importance of establishing a link between the cultural identification of the Readiness to Learn project parents, the language of schooling that they choose for their child and, above all, the types and frequency of community actions taken to determine their individual and collective identities.

Figure 4.21: Sense of belonging to linguistic communities



Experimental groups: Analyses revealed significant differences between the experimental groups with respect to identification with linguistic communities [$F(2,321) = 5.74$, $p = 0.004$] (see Table 4.25). Scores for linguistic identification (see Figure 4.21) should be interpreted using a 5-point scale where 1 = “Anglophone group only OR neither”; 3 = “Both groups equally”; and 5 = “Francophone group only”. A high score therefore indicates a stronger sense of belonging to the francophone group. We can see in Table 4.25 that G1 identifies with both linguistic groups while G3 identifies primarily with the francophone group.

Table 4.25: Analysis of the variance (ANOVA) in sense of belonging to linguistic communities across the experimental groups

<i>Experimental groups</i>	<i>Program group (G1)</i>	<i>Formal daycare comparison group (G2)</i>	<i>Informal care comparison group (G3)</i>	<i>Total sample</i>	<i>Significant differences between the groups?</i>
<i>Scale</i>	<i>Mean score (standard deviation) n</i>	<i>Mean score (standard deviation) n</i>	<i>Mean score (standard deviation) n</i>	<i>Mean score (standard deviation) n</i>	<i>F Test</i>
Sense of belonging to linguistic communities	3.46 (1.25) n = 113	3.73 (1.25) n = 113	4.03 (1.15) n = 98	3.73 (1.24) n = 324	Yes G1** < G3

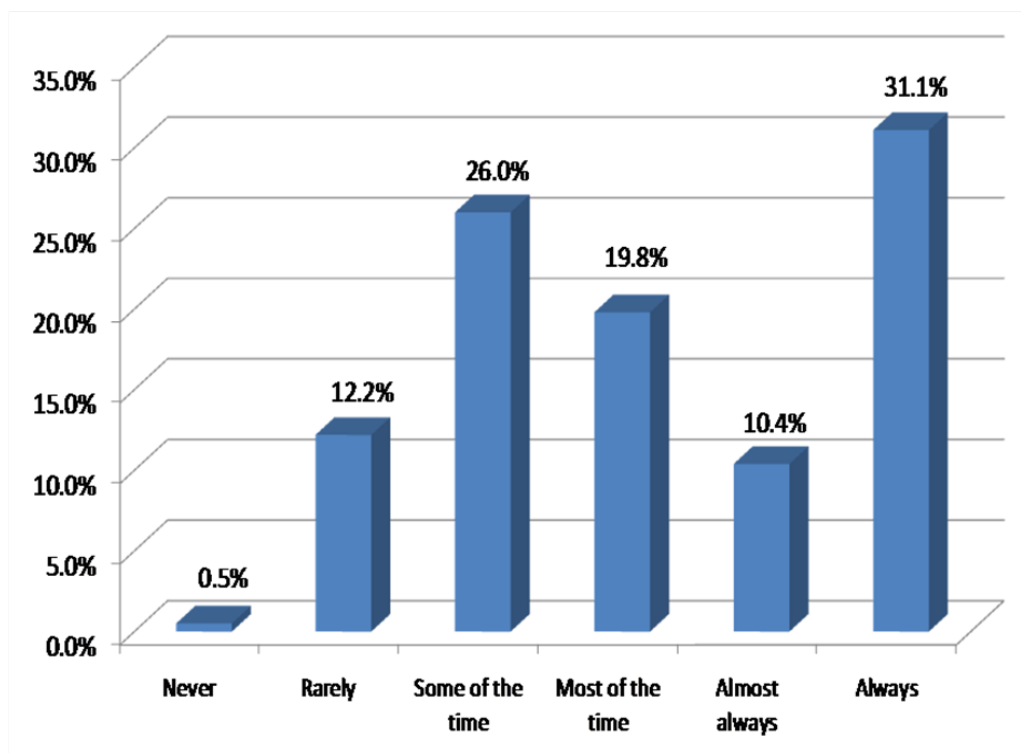
Note: Significance level: *** $\leq 1\%$; ** $\leq 5\%$.

4.5.3 Perception of the francophone vitality in the community

Perception of the francophone vitality in the community is measured using answers to a series of questions on the frequency of French used in public places (i.e., place of business, municipal government, community organizations, workplaces and government services) and access to services in French (media). The overall score gives us an indication of how often French is used in certain organizations. Other questions deal with the language normally used by the respondent when interacting with specific organizations. The overall score also includes the respondent's access to French media. It should be noted that the frequency with which certain organizations use French did not allow us to make a distinction between cases where an individual chose to use English when French could have been used, and cases where French services did not exist.

Total sample: Figure 4.22 shows that slightly more than half of the respondents (61.3%) reported having access to French media and being able to use French in public places most of the time, almost always, or always.

Figure 4.22: Perception of the community's vitality



Experimental groups: Comparative analyses revealed significant differences between the experimental groups in the perception of francophone vitality in the community [$F(2, 209) = 4.15, p = 0.017$] (see Table 4.26). Scores should be interpreted using a 6-point scale where 1 = “Never”; 3 = “Some of the time”; 5 = “Almost always”; and 6 = “Always”. The higher the score, the greater the respondent’s perceived francophone vitality in the community (see Figure 4.22).

Moreover, we observed a high level of non-response (34.8%) to at least one of the questions that make up this scale. The non-responses consisted primarily of respondents indicating that they did not know to what degree their municipal government or community organizations used French. Conversely, a large majority of participants answered the question about the use of French during their interactions with government services. It may have been possible to reduce the non-response rate had the questions on the municipal government and community organizations been worded so that they referred to the use of French in interactions with these organizations rather than simply asking about the use of French by these organizations. We also noted a smaller number of non-responses with regard to the language used in the workplace. This question was not relevant for mothers in G3 since slightly less than half of them do not work.

Table 4.26: Analysis of the variance (ANOVA) in perceived francophone vitality in the community across experimental groups

<i>Experimental groups</i>	<i>Program group (G1)</i>	<i>Formal daycare comparison group (G2)</i>	<i>Informal care comparison group (G3)</i>	<i>Total sample</i>	<i>Significant differences between the groups?</i>
<i>Scale</i>	<i>Mean score (standard deviation) n</i>	<i>Mean score (standard deviation) n</i>	<i>Mean score (standard deviation) n</i>	<i>Mean score (standard deviation) n</i>	<i>F Test</i>
Community vitality	3.84 (1.27) n = 74	4.02 (1.53) n = 75	4.51 (1.39) n = 63	4.10 (1.42) n = 212	Yes G1** < G3

Note: Significance level: ** $\leq 5\%$.

In order to better understand the results relating to respondents' perception of francophone vitality in the community it is worth verifying whether this perception is associated with the concentration of Francophones in the community. According to Table 4.27, there are indeed significant differences between the communities with respect to perception of francophone vitality [$F(5, 206) = 208.99, p = 0.000$]. The results of post-hoc analyses (Tukey HSD) indicate the following significant differences:

- Durham respondents perceived it as having significantly less francophone vitality than the other communities.
- Edmundston respondents perceived it as having significantly higher francophone vitality than the other communities.
- Orleans and Cornwall ranked second highest in perceived francophone vitality.
- Saint John and Edmonton obtained very similar scores.

These results are an approximate reflection of the percentage of Francophones living in these communities. In decreasing order of perceived francophone vitality, the community of Edmundston came first, followed by the communities of Orleans, Cornwall, Saint John, Edmonton and Durham. This order mirrors the percentage of Francophones living in each community (Statistics Canada, 2006c).

Table 4.27: Analysis of the variance in the subjective vitality scores (ANOVA), by community

<i>Vitality</i>	<i>Mean score (standard deviation) n</i>	<i>Percentage of Francophones in the community</i>	<i>Significant differences between the communities?</i>
<i>Communities</i>	<i>n</i>		<i>Post-hoc (Tukey HSD)</i>
Edmundston	5.74 (0.31) n = 77	91%	Yes Durham*** < all of the other communities Edmundston** > all of the other communities
Orleans	3.77 (0.75) n = 35	30%	
Cornwall	3.27 (0.76) n = 41	30.5%	
Saint John	3.06 (0.67) n = 19	5%	

<i>Vitality</i> <i>Communities</i>	<i>Mean score</i> <i>(standard deviation)</i> <i>n</i>	<i>Percentage of Francophones in the community</i>	<i>Significant differences between the communities?</i> <i>Post-hoc (Tukey HSD)</i>
Durham	2.16 (0.56) n = 18	2.8%	Edmonton, Saint John** > Durham Cornwall** < Orleans** < Edmundston
Edmonton	2.95 (0.59) n = 22	2.7%	
TOTAL	4.10 (1.4) n = 212	N/A	

Note: Significance level: *** $\leq 1\%$, ** $\leq 5\%$.

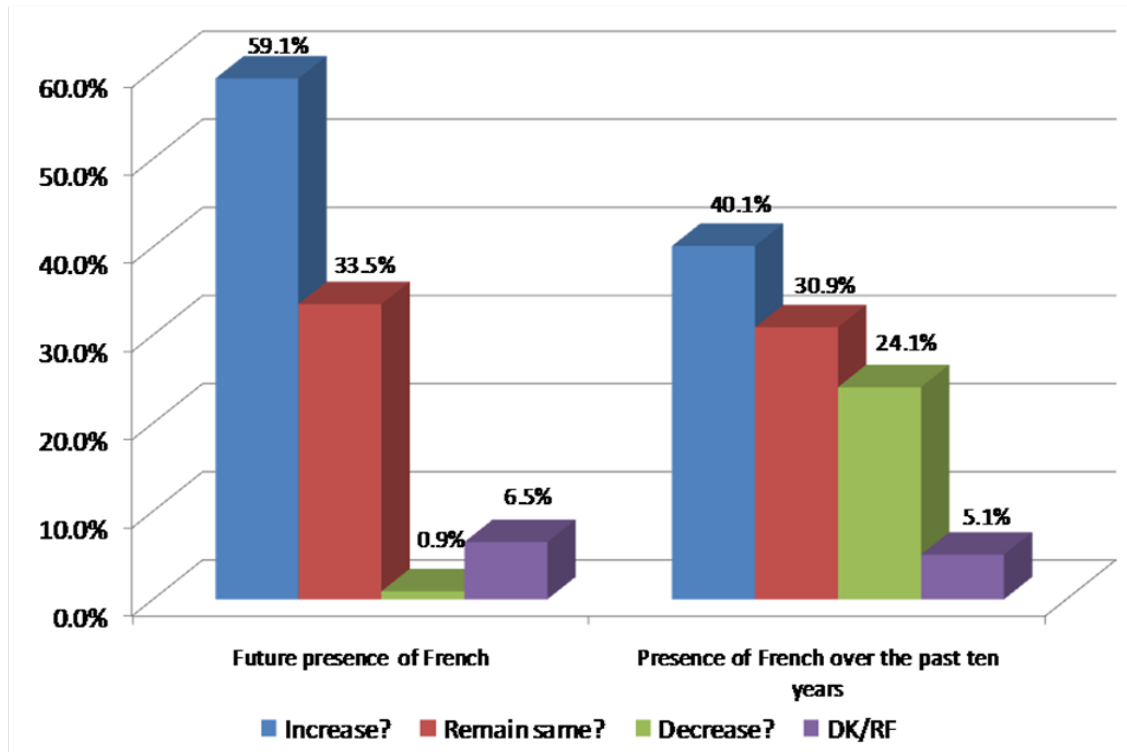
4.5.4 Presence of French in the community

Respondents gave their opinion on the presence of French in their community. For the first question, they were asked whether they felt that, over the next 10 years, the presence of French would increase, decrease or remain the same in their community. The second question also asked their opinion about the presence of French; but this time, over the past 10 years. This question was only asked to respondents who had lived in the community for 10 years or more.

Total sample: Figure 4.23 provides details on the respondents' answers. The reader should note that approximately one quarter of the respondents are from Edmundston—a community with a strong concentration of Francophones. Of the 325 respondents, 6.5% did not give an opinion on the future presence of French in their community. Of the respondents who did give an opinion, more than half (59.1%) felt that the presence of French would increase in their community. As for the second question, one third of participants (33.2%) said that they had lived in the community for 10 years or less, and therefore were unable to assess the evolution of French presence in their community. Of the respondents who had lived in their community for more than 10 years, a small percentage (5.1%) said that they were unable to assess changes in the presence of French. The results of respondents who gave an opinion showed that:

- 40.1% thought that the presence of French had increased;
- 30.9% thought that the presence of French had remained the same;
- 24.1% thought that the presence of French had decreased.

Figure 4.23: Presence of French in the community



Other analyses were performed to test whether the number of years spent in the community had an influence on the perception of respondents. For the purposes of these analyses, respondents were divided into two groups: long-term residents (those living in the community for 11 years or more) and more recent residents (those living in the community for 10 years or less). The opinions of long-term residents on the future presence of French in the community were compared with the opinions of more recent residents. The results did not indicate a significant difference between the two groups ($X^2(3, 321) = 7.515, p > 0.05$).

Experimental groups: Comparative analyses did not reveal any significant differences between the experimental groups in terms of opinions on the future presence of French in the community ($X^2(4, N = 304) = 0.84, p > 0.05$) or the presence of French over the past 10 years ($X^2(4, N = 206) = 7.78, p > 0.05$).

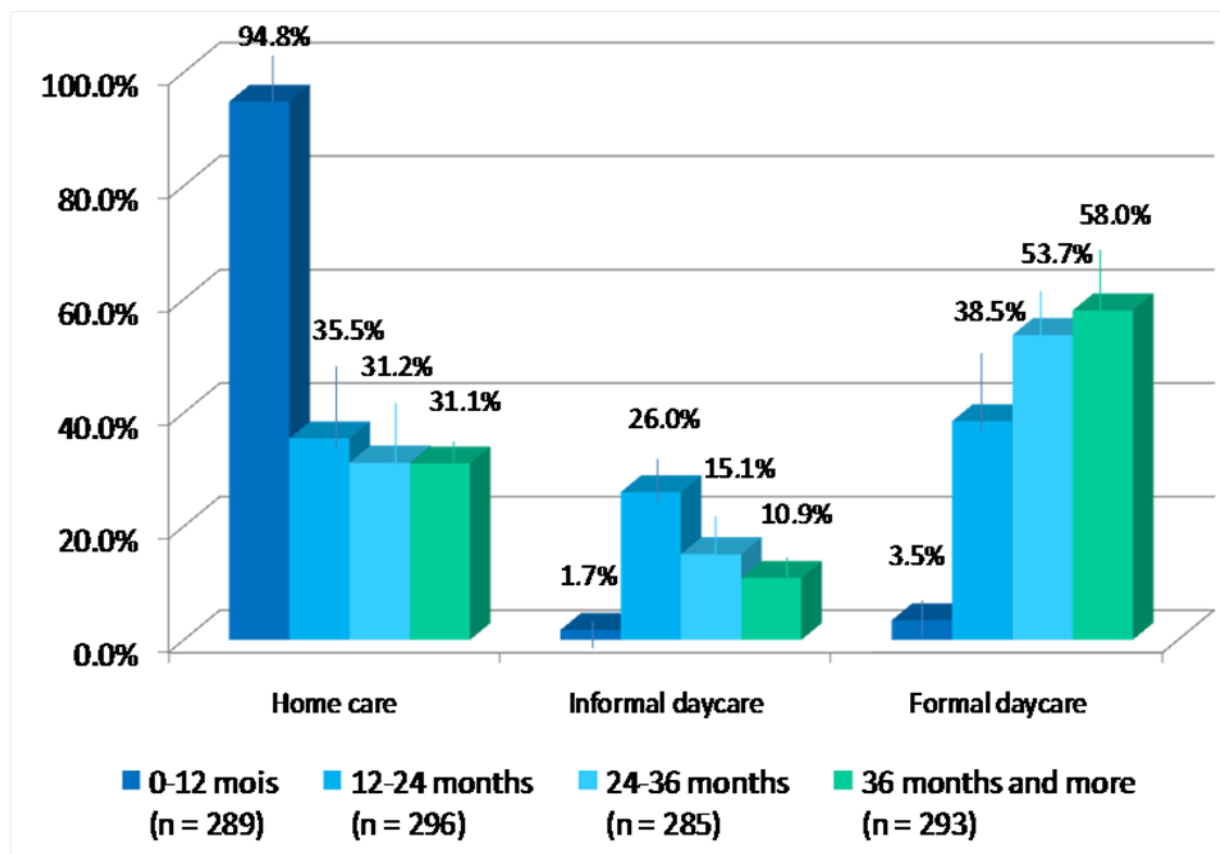
4.6 SECTION VI: CHILD CARE

The final questions of the baseline survey dealt with past child care, separating the different child care arrangements by the following periods: from birth to one year old, from one to two years old, from two to three years old, as well as the type of child care being used at the time of the survey. Questions were also asked about the languages used in the child care provided during these different periods. The survey ended with an open question on the reasons behind the type of child care chosen.

4.6.1 Main child care arrangements

Total sample: The reader should note that it was impossible to report the main type of child care used for some of the children, since many parents identified several different child care arrangements used for each of the periods. Child care arrangements were combined into three groups: home care, informal care (home care in someone else's home by a relative or someone other than a relative) and formal daycare (care in a daycare facility, whether or not approved or registered by the government). We can see in Figure 4.24 that home care remains the most popular arrangement when the children are less than one year old. However, during the child's second year, we can see that the use of this type of arrangement drops by more than half. A large percentage of parents (64.5%) chose a type of child care that was outside of the home. This percentage increased to 68.8% from the second to third year of childhood. When the baseline survey was administered, 68.9% of the children attended a type of child care that was outside of the home. Of those children, 58% attended a formal daycare.

Figure 4.24: Child care arrangements used per year of life



Experimental groups: Table 4.28 indicates the child care background for all three experimental groups. It should be noted that child care arrangements have been combined into two groups: in a home (in the child's home or an informal care); or in a formal daycare (a daycare facility, whether or not approved or registered by the government). The results for child care from birth to age one have not been presented (there were less than five cases in some cells);

there was no significant difference between the experimental groups since a very small number of children in each group attended a formal daycare ($X^2(12, N=289) = 6.095, p > 0.05$). However, for the other periods, we can see that there were significant differences between the groups in their child care backgrounds [from 12 to 24 months ($X^2(12, N=296) = 41.157, p < 0.01$); from 24 to 36 months ($X^2(12, N=285) = 100.2, p < 0.01$); 36 months or older ($X^2(12, N=293) = 142.7, p < 0.01$)]:

- The children in G1 attended a formal daycare earlier than the children in the other groups;
- The number of children in G2 attending a formal daycare increased a year before the Readiness to Learn project began, to the point where the number of children was practically equal to G1;
- When the Readiness to Learn project began, a small number of children in G3 (eight) were registered with a formal daycare, most likely on a part-time basis (less than two days/week if we consider the eligibility criteria for the Readiness to Learn project);
- Some parents of children in G1 and G2 indicated that when the Readiness to Learn project began, their child was being cared for in the home: this may be explained by the fact that the parents reported the child care arrangements in effect at the time of the survey, and some surveys were conducted during the summer, i.e. before formal daycare began.

Table 4.28: Child care background by experimental group

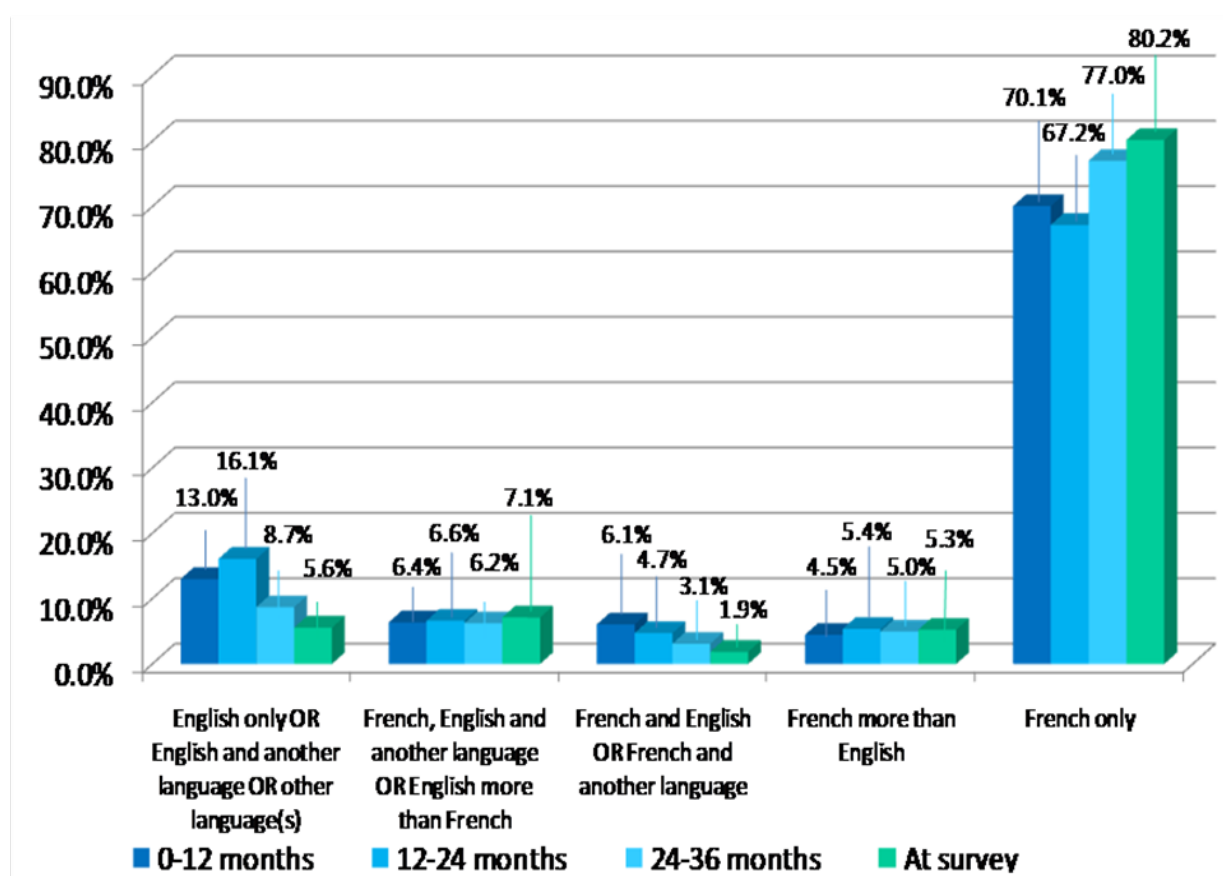
<i>Experimental groups</i> <i>Child's age and arrangements</i>	<i>Program group (G1)</i> <i>n (%)</i>	<i>Formal daycare comparison group (G2)</i> <i>n (%)</i>	<i>Informal care comparison group (G3)</i> <i>n (%)</i>	<i>Total sample</i> <i>n (%)</i>	<i>Significant differences between the groups?</i> <i>Chi square</i>
From 12 to 24 months					
In a home	48 (16.2)	67 (22.6)	67 (22.6)	182 (61.5)	Yes***
In a formal daycare	56 (18.9)	39 (13.2)	19 (6.4)	114 (38.5)	
TOTAL	104 (35.1)	106 (35.8)	86 (29.1)	296 (100)	
From 24 to 36 months					
In a home	26 (9.1)	30 (10.5)	76 (26.7)	132 (46.3)	Yes***
In a formal daycare	74 (26.0)	69 (24.2)	10 (3.5)	153 (53.7)	
TOTAL	100 (35.1)	99 (34.7)	86 (30.2)	285 (100)	
At survey					
In a home	20 (6.8)	23 (7.8)	80 (27.3)	123 (42.0)	Yes***
In a formal daycare	82 (28.0)	80 (27.3)	8 (2.7)	170 (58.0)	
TOTAL	102 (34.8)	103 (35.2)	88 (30.0)	293 (100)	

Note: Significance level: *** $\leq 1\%$.

4.6.2 Languages normally spoken in the main child care settings

Total sample: Figure 4.25 illustrates respondent data on the languages spoken in the main child care settings for each of the specified periods. Language categories have been combined to permit presentation of the results. We can see that a very large majority of the children were cared for in French (on average, 73.6%) over the four periods examined. We can also see that the number of children cared for in English only (or in another language) dropped after the second period.

Figure 4.25: Languages spoken in the main child care settings from the child's birth to the survey



Experimental groups: For comparative analysis purposes, the languages spoken in the main child care settings for each of the periods were combined into the following three categories:

- English only OR English and another language OR other language(s);
- French, English and another language OR English more than French OR French and English equally OR French and another language OR French more than English (this category has been identified as “French and English”);
- French only.

Overall, we can observe in Table 4.29 that:

- G1 had the most children who were cared for in English only (or in another language) during the period from 12 to 24 months; we also note a tendency in G1 to care for the child in English only (or in another language) during the period from birth to 12 months;
- G3 had the least number of children attending child care in French only as of the 24 to 36 months period compared to the other two groups, even though G3 has a higher French language profile. However, consideration for the background of the main child care arrangements should be taken into account when interpreting these results. We can see that the number of children in G3 attending a French daycare did not drop during the period from 12 to 24 months. We did, however, see a significant rise in the number of children in G1 and G2 attending French child care during the period from 24 to 36 months;
- G2 had less children in English only (or English and another language) child care for the period from 24 to 36 months than did G3 which, in turn, had less children in English child care than G1. It is impossible to report the latter results since some cells had less than five respondents.

In terms of cells, we observed:

- No significant difference in languages used in child care settings from birth to 12 months ($X^2(4, N=314) = 8.52, p > 0.05$);
- Significant differences between groups in languages used in child care settings when the children were 12 to 24 months ($X^2(4, N=317) = 12.58, p < 0.05$). During this period, a larger number of children in G2 were cared for in French only compared to G1;
- Significant differences between groups in languages used in child care settings when children were 24 to 36 months ($X^2(4, N=322) = 14.07, p < 0.01$). During this period, a larger number of children in G2 were cared for in French only compared to G1 and G3;
- No significant difference with respect to languages used in child care settings at the time of the survey ($X^2(4, N=323) = 7.44, p > 0.05$).

Table 4.29: Comparison between experimental groups for languages spoken throughout a child's history of care

<div><div>Experimental group</div><div>Child's age and language used in child care</div></div>	Program group (G1)	Formal daycare comparison group (G2)	Informal care comparison group (G3)	TOTAL	Significant differences between the groups?
	n (%)	n (%)	n (%)	n (%)	Chi square
From birth to 12 months					
English only OR English and/or other languages	18 (5.7)	15 (4.8)	8 (2.5)	41 (13.0)	No
French and English	23 (7.3)	18 (5.7)	12 (3.8)	53 (16.9)	
French only	64 (20.4)	78 (24.8)	78 (24.8)	220 (70.1)	
TOTAL	105 (33.4)	111 (35.4)	98 (31.2)	314 (100)	
From 12 to 24 months					
English only OR English and/or other languages	27 (8.5)	15 (4.7)	9 (2.8)	51 (16.1)	Yes**
French and English	20 (6.3)	15 (4.7)	18 (5.7)	53 (16.7)	
French only	61 (19.2)	82 (25.9)	70 (22.1)	213 (67.2)	
TOTAL	108 (34.1)	112 (35.3)	97 (30.6)	317 (100)	
From 24 to 36 months					
English only OR English and/or other languages	–	–	–	–	Yes***
French and English	13 (4.4)	14 (4.8)	19 (6.5)	46 (15.6)	
French only	82 (27.9)	95 (32.3)	71 (24.1)	248 (84.4)	
TOTAL	95 (32.3)	109 (37.1)	90 (30.6)	294 (100)	
At the time of the survey					
English only OR English and/or other languages	–	–	–	–	No
French and English	15 (4.9)	13 (4.3)	18 (5.9)	46 (15.1)	
French only	88 (28.9)	98 (32.1)	73 (23.9)	259 (84.9)	
TOTAL	103 (33.8)	111 (36.4)	91 (29.8)	305 (100)	

Note: Significance level: ** ≤ 5 %.

4.6.3 Choice of child care arrangements

A qualitative analysis of parents' answers on the reasons for their choice of child care arrangements for their child at the time of the baseline survey revealed that the parents in the program group (G1) were more concerned with the language aspect of a daycare. A large number of them mentioned the importance of placing their child in a francophone child care setting. Also, these parents were particularly concerned with their child's social development and degree of school readiness. It is interesting to examine these results in relation to the fact that parents in

G1 have a higher anglophone language profile than the parents in the other groups. This characteristic might be explained by the importance that they place on having their child attend French child care, thereby increasing their child's exposure to this language.

When we examine the data in further detail, we see that Orleans and Saint John have the greatest number of parents in G1 who chose a daycare because of its language profile, followed by Edmonton and Durham. Few parents were concerned with this element in Edmundston, no doubt because these parents can count on the francophone vitality in the community in their area to ensure that their child has plenty of exposure to French. As for Cornwall, the high number of non-responses in this community made it difficult to analyze the data.

Table 4.30: Reasons for parents' choice of child care arrangements, by experimental group

<i>Reasons for choosing child care arrangements</i>	<i>Program group (G1)</i>	<i>Formal daycare comparison group (G2)</i>	<i>Informal care comparison group (G3)</i>
	<i>n</i>	<i>n</i>	<i>n</i>
Language	39	13	4
Safety	7	5	2
Financial reasons	0	0	0
Maternity leave	3	2	9
Child's social development	25	9	7
School readiness	18	11	2
Child's personal development	13	6	12
Quality of daycares' organizational aspects	15	15	3
Quality of care	12	9	17
Both parents work	13	5	2
Convenience	19	10	14
Other	3	2	10

4.7 CORRELATION BETWEEN SCORES AND VARIABLES OF INTEREST

To conclude the analyses, it is worth examining the correlation between the scores obtained on the EYE-AD and some of the variables in the baseline survey, in order to verify to what degree they are associated. These correlations do not in any way suggest a causal impact, but are often associated with school readiness and child development in the literature (see Chapter 1). Table 4.31 presents a correlation matrix for these variables. As noted earlier, EYE-AD covers five components of child development:

- 1) Awareness of self and the environment (domain A)
- 2) Cognitive skills (domain B)
- 3) Language and communication (domain C)
- 4) Physical/motor skills (fine and gross motor skills) (domain D)
- 5) Awareness and involvement in francophone culture (domain E)

In general, we observed very few significant correlations between the predictors (variables in the baseline survey) and the study outcomes (EYE-AD scores). The exception can be found in language-related variables (the linguistic continuum created for languages normally used for literacy activities, languages spoken to the child by the mother and languages used by the child). These variables are even more correlated to the three EYE-AD domains pertaining to language (E, A and C). It is interesting to note that linguistic practices in the home were related to the results obtained by the children on the communication scale (domain C), even before the intervention began. The association between linguistic practices and domain A is also interesting and reflects the preponderance of vocabulary-related items that make up this scale. However, the very strong correlations between these variables and domain E should be interpreted with caution. The protocol suggested by Willms (2007) implies that the mean score for domain E contains parents' answers to items E4 to E6, which represents half of the items. Consequently, the strong correlations observed are, in all likelihood, an artifact due to the use of an identical source of information for associated language questions. For example, the language normally used by a child with his/her mother, father and friends (question on the baseline survey) is a construct identical to the one measured for domain E, i.e. the language normally used by the child to communicate with his/her mother, father and friends (questions for which the answers were provided in the baseline survey).

Positive parenting practices proved to be slightly correlated with domain D while authoritative parenting practices were slightly correlated with domains C, A and B for the French test. The linguistic environment varied from somewhat to strongly correlated with domains A, C and E, through literacy activities, languages in which the parent communicates with the child or languages in which the child communicates with the parent. What is interesting is that the perceived francophone vitality in the community and involvement in the culture are somewhat correlated to domains C and E. We can speculate that the effect of these variables on domains C and E is passed on through the parents who, through their choices and actions, provide children with opportunities to grow in an environment where interactions take place in French.

Table 4.31: Matrix of correlations between EYE-AD scores and the variable scales used in the baseline survey

Domains Variables	A <i>(French)</i>	B <i>(French)</i>	C <i>(French)</i>	D <i>(French)</i>	E <i>(French)</i>	A <i>(English)</i>	B <i>(Eng)</i>	C <i>(Eng)</i>	D <i>(Eng)</i>
Positive parenting style	-0.07 n = 263	0.03 n = 263	-0.03 n = 306	-0.13** n = 262	0.04 n = 310	-0.12 n = 43	-0.01 n = 43	-0.03 n = 62	0.02 n = 43
Authoritative parenting style	0.18*** n = 248	0.14** n = 248	0.14** n = 289	0.03 n = 247	0.10 n = 294	0.14 n = 41	0.24 n = 41	0.24 n = 59	0.26 n = 41
Literacy activities	0.13** n = 259	0.18*** n = 259	0.07 n = 303	0.05 n = 258	-0.05 n = 308	0.20 n = 44	0.12 n = 44	0.22 n = 62	0.03 n = 44
Linguistic continuum – for literacy activities	0.39*** n = 252	0.10 n = 252	0.55*** n = 292	-0.01 n = 251	0.79*** n = 297	0.01 n = 40	-0.20 n = 40	-0.17 n = 59	-0.14 n = 40
Language used by the child (continuum)	0.31*** n = 249	0.02 n = 249	0.50*** n = 289	-0.03 n = 248	0.81*** n = 293	-0.09 n = 40	-0.18 n = 40	-0.22 n = 56	0.02 n = 40

Domains Variables	A (French)	B (French)	C (French)	D (French)	E (French)	A (English)	B (Eng)	C (Eng)	D (Eng)
Language spoken to the child by the mother	0.33*** n = 267	0.09 n = 267	0.48*** n = 311	0.02 n = 266	0.71*** n = 316	-0.29 n = 44	-0.33** n = 44	-0.31 n = 63	-0.37** n = 44
Involvement in culture	0.08 n = 246	-0.03 n = 246	0.17*** n = 287	-0.11 n = 245	0.28*** n = 292	-0.14 n = 41	-0.06 n = 41	-0.07 n = 55	-0.25 n = 41
Subjective community vitality	0.10 n = 267	-0.03 n = 267	0.15*** n = 311	-0.09 n = 266	0.25*** n = 316	-0.10 n = 44	-0.08 n = 44	-0.06 n = 63	-0.06 n = 44
Social support	0.01 n = 267	-0.02 n = 267	-0.02 n = 311	-0.11 n = 266	-0.06 n = 316	-0.19 n = 44	0.03 n = 44	-0.21 n = 63	0.26 n = 44
Family functioning	0.09 n = 265	0.05 n = 265	0.08 n = 309	-0.01 n = 264	0.06 n = 314	-0.03 n = 44	0.12 n = 44	-0.04 n = 63	-0.03 n = 44
PMK depression	-0.11 n = 262	-0.10 n = 262	-0.06 n = 306	-0.09 n = 261	-0.05 n = 311	-0.36** n = 44	-0.21 n = 44	-0.33 n = 63	0.02 n = 44

Note: Significance level: *** $\leq 1\%$; ** $\leq 5\%$.

4.8 DISCUSSION OF THE RESULTS

This last section provides a brief discussion of the results, and their implications on future analyses.

Socio-demographic information

The experimental groups are homogenous in terms of the child's gender, mother's age when the child was born, parents' level of education, family structure, family income and hours worked by the fathers. For items relating to language profiles, the experimental groups are homogenous in terms of official languages known and the first language learned by the mothers.

However, for certain key variables (known to influence child development), significant differences emerge in comparing the experimental groups. For example, G1 has more first-born target children and G3 has more children who were third-born (or later). This may be explained by the fact that having a larger family leads mothers to think differently about working outside of the home, affecting the choice of child care arrangements for the children. Mothers (or fathers) of larger families may choose to stay at home more than parents with just one child. With respect to family size, we also noted that families in G1 were smaller (three people or less) while G3 had larger households (five people or more).

Family income strongly affects access to French resources and services. On this subject, the Readiness to Learn project sample was affluent as a whole, with a median family income between \$50,000 and \$59,999. Moreover, we did not observe any significant difference between the experimental groups in terms of family income. However, it is important to note that we would have had to use an indicator derived from other information provided by the respondent to obtain a better estimate of the financial comfort level of participating families. For example, the number of people in a household could have been used to calculate a sufficient income

(determined by the size of the household) or to calculate the low income cutoff (LICO).³⁵ Likewise, the respondent's profession category could have been used to calculate the socio-economic status (SES). However, to calculate these measures, the exact income would have been required, or at the very least, more restrictive income categories. Increments of \$10,000 were not sufficient to capture the information. These issues pertaining to the classification of the respondent's profession and exact income were discarded to avoid taxing administration of the parents' baseline survey; however, they will be presented in a follow-up survey.

With regard to language profiles, a clear trend could be observed in the results. G1 is slightly more English and these differences are more noticeable when the linguistic variables pertain to the father. For example, a smaller percentage of parents in G1 went to French elementary school compared to parents in G2 and G3. Particular attention must be given to the languages spoken in the home and the languages spoken with the child since they are important factors affecting the child's language development. We noted that G3 has more parents who speak only French in the home and use only French with their child. Conversely, G1 has a greater number of parents who speak English more in the home and use English more with their child. G2 is about halfway between G1 and G3 for the number of mothers and fathers who speak French only in the home and use French only with their child.

Family process scales

The results do not show any significant differences between the experimental groups for many variables, such as parenting practices, literacy activities, social capital, social support, family functioning and depression.

Conversely, the linguistic continuum for literacy activities and languages used by the child illustrates differences between the experimental groups that are cohesive with the results on parents' language profiles. The program group has parents who participate in literacy activities more often in English than the informal care comparison group. The program group also includes more children who use of English in their surroundings than the informal care comparison group.

For the social support scale, there were very few variations in the scores obtained—80.9% of respondents obtained the maximum score on this scale. This means that almost all of the respondents feel that they have an excellent support network. The same image emerges for social capital, where 87.2% of respondents reported enjoying a good or very good social capital. It is important, however, to underline the weak response rate to the questions on social capital (65% response rate). We observed that 35% of parents did not answer at least one of the questions (in other words, they chose the option “Don't know/refuse to answer” as a response) for this item. The hypotheses explaining this weak response rate are as follows: isolation of the families, recent immigration, lack of a neighbourhood committee or gathering, and weak social cohesion within the community. It must be emphasized that some participants are from large population aggregates, which may explain why people do not know their neighbours as well.

Finally, the family functioning scale and depression scale indicate that there are very few dysfunctional families, according to the scores obtained on these scales. It is important to add

³⁵ Families below the LICO have an income that is below the corresponding cutoff for Canadian families with the same-sized family unit and the same-sized community. This cutoff is published by Statistics Canada for certain baseline years. For example, the 2007 LICO for a family of four living in an urban centre with a population of 100,000 to 499,999 was \$34,671 (Statistics Canada, 2007).

that these scales present non-desirable measures of dispersion (very little variation); analysis results are therefore to be interpreted with caution if these variables are retained.

Identity and subjective vitality

It is interesting to note that there is no difference in the level of involvement in the francophone culture across the experimental groups, despite their differences when it comes to certain linguistic variables. These results seem to suggest that the use of English in everyday living is not related to a parent's decision to develop their child's francophone identity, or to get involved in the francophone community.

We can see, however, that the level of perceived francophone vitality in the community is significantly different from one group to the next. G1 has a weaker perception of the French vitality than does G3. We must bear in mind the high rate of non-response to some of the questions measuring the respondent's subjective vitality. Specifically, non-responses were most common among questions on the use of French by certain organizations—questions that the respondents appeared to have found difficult, possibly because this information is outside of their sphere of knowledge. The next questions measuring subjective vitality should be aimed at measuring the use of French in interactions with these organizations, in order to reduce the rate of non-response.

Child care arrangements

The background of languages used in child care (prior to introduction of the Readiness to Learn project) could be a variable that explains the children's EYE-AD scores. In fact, we could hypothesize that if a child is exposed only to a francophone setting, he/she will acquire more vocabulary in that language, thereby improving his/her understanding during the administration of the test. The results show that the children in G1 aged 12 to 36 months had been more exposed to an anglophone child care setting than the children in G2 and G3. From 36 months onward, we observed a greater percentage of children in G2 attending a francophone child care setting than the children in G3.

Future analyses

The results of comparative analyses enabled us to establish a list of variables that need to be included as control variables in impact analyses, given that differences were noted between the experimental groups. It is important to report the significant pre-intervention differences between the experimental groups in order to accurately assess the impact of the program on child development. It must be noted that several variables were immediately excluded from future analyses because the information that they provided was deemed to be redundant (for example, first official language spoken) or it was determined that they were not relevant in answering the research question (for example, languages spoken with friends).

Hence, only the following socio-demographic variables, measured in the baseline survey, will be used as co-variables in impact analyses:

- Birth order
- Languages used in the home by the mother
- Languages used in the home by the father

- Languages the mother speaks with the target child
- Languages the father speaks with the target child
- Languages used by the child
- Languages used during literacy activities
- Sense of belonging
- Subjective vitality
- Languages spoken in main child care settings.

5.0 Comparison between the Readiness to Learn project sample and the SVOLM sample

The objective of this chapter is to answer the following question: If the Franco-Saskatchewan program and family workshops were extended to the entire Francophone minority population in the communities participating in the project would the effects observed be similar to those obtained with the Readiness to Learn project? The analyses conducted in this chapter will attempt to determine whether the children in the Readiness to Learn project sample are representative of the Francophone minority children living in the geographic area that corresponds “the closest” to each of the Readiness to Learn project communities. To do this, we used data from the national survey conducted by Statistics Canada: the Survey on the Vitality of Official-Language Minorities (SVOLM). This survey is an interesting base for comparison with Readiness to Learn project data since it allows us to describe the French-speaking population living outside of Quebec. SVOLM includes two data files, the first dealing with adults and the other with children who have at least one parent from an official language minority (English in Quebec and French outside of Quebec). Only the data from the SVOLM children’s file was used; there is no information on the children in the adults’ file. It should be noted that the SVOLM child and adults files could not be combined for analyses (Statistics Canada, 2006g, p. 7).

Section 5.1 describes the SVOLM and the methodology used to compare the survey data with the Readiness to Learn project data. Section 5.2 presents the results of the comparisons between the Readiness to Learn project and the SVOLM for the following sociodemographic characteristics: family structure, parents’ level of education, total family income and the family’s language profile. Section 5.3 concludes the chapter.

5.1 DESCRIPTION OF THE SVOLM AND THE METHODOLOGY USED FOR COMPARISON WITH THE READINESS TO LEARN PROJECT

5.1.1 Description of the SVOLM

The SVOLM has two objectives: it aims to collect information in priority areas, such as education; and it aims to “enhance the vitality of the English and French linguistic minorities” (Statistics Canada, 2006g, p. 2). The survey targeted members of the official language minority (English in Quebec and French outside of Quebec) population (Statistics Canada, 2006g, p. 4). The SVOLM sample was selected from individuals who completed the long questionnaire for the 2006 Census (distributed to 20% of Canadian households). Adult respondents were chosen based on their answers to language-related questions (mother tongue, knowledge of official languages and language spoken most often at home). Comparative analyses between the SVOLM and the Readiness to Learn project were based solely on the SVOLM children’s file.

In the SVOLM sample, “the children were selected based on their parents’ linguistic characteristics, they may or may not belong to the official language minority” (Statistics Canada, 2006g, p. 3). Also, “Individuals with a mother tongue other than one of the official

languages were also part of the target population based on their knowledge and use of French or English” (Statistics Canada, 2006g, p. 3). In other words, newcomers whose mother tongue is not French, but who know/speak French, are included in the SVOLM. On the other hand, Readiness to Learn project children were selected based on the “ayant droit” status of their parents, meaning that these children were eligible to attend French school, and because their parents intended to enroll them in French school.

Therefore, there is a significant difference in the definitions of the Readiness to Learn project and SVOLM target populations, and this must be taken into consideration during analysis. According to Forgues and Landry (2006), a Francophone population (such as the one used in the Readiness to Learn project) that is defined using the “ayant droit” criterion would result in a much more restrictive pool whereas a Francophone population (such as the one used in the SVOLM) that is defined using several criteria (e.g., mother tongue, knowledge of official languages and languages spoken at home) would result in a greater number of eligible individuals. Consequently, these distinctions in the definitions of the Readiness to Learn project and SVOLM target populations should translate into:

1. A greater percentage of immigrant parents in the SVOLM than in the Readiness to Learn project;
2. A smaller percentage of parents whose mother tongue is French in the SVOLM than in the Readiness to Learn project.

Since information on the immigrant status of Readiness to Learn project parents was not collected in the base survey, assumption 1 cannot be investigated with any degree of accuracy at this time. We can, however, obtain an approximate percentage of the number of immigrants in the Readiness to Learn project based on the mother tongue that respondents indicated on their consent form³⁶. The percentage of Readiness to Learn project respondents whose mother tongue was listed as *Other* (e.g., Russian or Arab), *French and another language* or *English and another language* is 4.3%. The SVOLM (weighted) data chosen for comparison with the Readiness to Learn project data reveal that 24.3% of respondents were not born in Canada³⁷. A priori, assumption 1 is confirmed, since there is a gap of about 20 percentage points between the number of immigrants in the Readiness to Learn project and those in the SVOLM. Assumption 2 was confirmed using information from about parents’ mother tongue from the Readiness to Learn project and SVOLM samples (see tables 5.12 and 5.14 below).

5.1.2 Description of geographic areas

To establish the representativeness of children in the Readiness to Learn project, we compared them with SVOLM children living in the geographic area (strata of geographic areas; Statistics Canada, 2006h, p. 2) that corresponds “the closest” to each of the Readiness to Learn project communities. Hence, when we talk about the SVOLM sample, we are referring to the six geographic regions that correspond to each of the communities, and not the entire population of Francophones living in a minority situation. To ensure that there would be a sufficient number of observations for each group of children studied, we chose SVOLM children aged 3 to 5 years old. Keep in mind that the Readiness to Learn project sample includes children from the age of 2

³⁶ These data were not presented in Chapter 4 since there were not enough participants.

² These data have not been presented in this chapter but are available upon request.

years and 8 months up to 3 years and 11 months. Finally, we kept SVOLM children whose parents were of opposite genders (biological or not) or who lived in a single-parent family with their father or mother (biological or not). It must be pointed out that the Readiness to Learn project sample is not, by nature, “random/probabilistic” as it consists primarily of parents who use a formal daycare service—specifically, a daycare centre (which was true for nearly 70% of the parents according to the base survey). It would therefore not be surprising to find that the Readiness to Learn project children (N=325) and SVOLM children (N=789) differ in several ways.

5.1.3 Methodology for comparing SVOLM and Readiness to Learn project

To determine the representativeness of the Readiness to Learn project children in relation to Francophone minority children, weighting factors calculated by Statistics Canada were used. In order for the characteristics of the SVOLM sample to be representative of individuals belonging to the Francophone minority, Statistics Canada calculates a representative weight for each respondent. Since SVOLM was a probabilistic survey, the weight associated with each observation was inversely equal to the probability of being sampled. The reader can consult the lexicon in Appendix G for a summary of the representative weights defined by Statistics Canada.

The tables presented in this chapter are designed to determine whether the Readiness to Learn project children and SVOLM children have the same characteristics. Whenever possible, we compared each characteristic of the children involved in the two studies using a Chi square test. For example, we calculated a Chi square (Pearson) statistic to determine whether the ratio of boys/girls is similar in the Readiness to Learn project and SVOLM samples³⁸.

In order to carry out a Chi square test, we need to compare frequencies in the same units of measure. For SVOLM, the use of Statistics Canada weighting factors meant that child frequencies were expressed in units of a thousand whereas Readiness to Learn project child frequencies were expressed in units of ten. There is therefore an “inconsistency” between Readiness to Learn project and SVOLM in the units used to express child frequencies. In order to conduct reliable comparative analyses between the two surveys, it was necessary to “tweak” the SVOLM data so that they were expressed in the same units as the Readiness to Learn project—in other words, units of ten. We therefore sought to render the original SVOLM data representative of the Francophone minority in the six geographic regions being studied, and comparable to the Readiness to Learn project data. To accomplish this, we used the following adjustment method with the original SVOLM data:

1. For each characteristic studied (e.g., boy/girl), we used the weighting factor calculated by Statistics Canada to obtain representative percentages of the Francophone minority population for preschoolers living in the six geographic regions being studied.
2. We then applied these representative percentages to the non-weighted SVOLM (N=789) to adjust the data. For a given characteristic, the percentages calculated with

³⁸ It is important to note that the use of weighting factors calculated by Statistics Canada allowed us to collect population parameters that the SVOLM sample was supposed to represent. To lighten this report, we will use the words sample and population interchangeably. However, it must be clear to the reader that the comparisons presented in this chapter seek to determine to what degree the Readiness to Learn project sample is representative of the Francophone minority population found in the regions being studied.

the adjusted SVOLM data are therefore equal, by construction, to the representative percentages deduced using Statistics Canada weighting factors. The distribution of a child's characteristic based on the adjusted SVOLM data is representative of the Francophone minority in the six regions.

3. Finally, a comparison of Readiness to Learn project and SVOLM child frequencies in a Chi square test is valid in terms of units; that is to say that the Readiness to Learn project and SVOLM child frequencies are both expressed in units of ten children.

Here is an example of the method used to adjust non-weighted SVOLM data to clear any doubt from the reader's mind. Originally, the SVOLM sample used for comparison with Readiness to Learn project data included 425 boys and 364 girls. Non-weighted data in this SVOLM sample were therefore broken down into 54% boys and 46% girls. According to the weight factors calculated by Statistics Canada to make the SVOLM data representative of the Francophone minority population in the six regions, approximately one child out of two is a girl. It is therefore clear that the data in the original SVOLM sample were not representative of the Francophone minority population studied. We then applied the representative percentages deduced from the weighted factors calculated by Statistics Canada, that is to say, 50.4% girls and 49.6% boys, to the non-weighted SVOLM data to adjust them. We thus ended up with 398 boys and 391 girls, which is representative of the general population of the six regions being studied. This was the method we followed to render the non-weighted SVOLM data representative of Francophone minority preschoolers in these regions.

It should be noted that some of the tables in this chapter do not contain results of the Chi square test (indicated as N/A). The reason is that any cell from the SVOLM data with less than 10 original observations are left blank and cannot be used for analysis (Statistics Canada, 2006g, p. 17). In these cases, it is therefore impossible to do a Chi square test. To ensure homogeneity in the presentation of the tables, Readiness to Learn project data cells with less than 10 observations were also left blank. However, this information exists and a Chi square test could be done if the original cells from the SVOLM included 10 observations or more.

For certain so-called "ongoing" characteristics (e.g., family size), many values were combined (e.g., families of five or more) to make up for a lack of observations. Whenever possible, these "categorized characteristics" in the Readiness to Learn project and the SVOLM were compared with a Chi square test.

While reading this chapter, the reader should keep the following points in mind:

- Only those characteristics deemed important, with (quasi) identical definitions in both surveys, were compared.
- All numerical results from the SVOLM were taken from a representative sample of children aged 3 to 5 years old, living in the six census areas where the Readiness to Learn project communities are located, and for whom at least one of the parents is a Francophone³⁹.
- The census areas (Statistics Canada, 2006g, p. 26) are the SVOLM geographic areas (presented in parentheses in the tables) that are most "comparable" to the Readiness

³⁹ Calculations were based on the SVOLM microdata file.

to Learn project communities. However, they also include many communities other than the ones participating in the Readiness to Learn project.

- The Readiness to Learn project child population (ranging from 2 years and 8 months to 3 years and 11 months) is different from the SVOLM population in terms of age range.
- One child is the analysis unit in the SVOLM file used; and it is also the analysis unit in this chapter. All of the characteristics presented are therefore expressed in number of children.
- For the comparisons between communities, each row of a table presents the distribution of the characteristic studied for the Readiness to Learn project and the SVOLM by community and, if possible, the Chi square test associated with the comparison.
- Some of the comparisons between communities have not been presented, for two reasons: first, when the distribution of the characteristic by community was practically identical to that observed in the total sample for each survey; second, when a table had a significant number of blank cells due to a lack of observations for some of the categories relating to the characteristic being studied.
- Cells with less than 10 observations are denoted by “-” for the Readiness to Learn project and “x” for the SVOLM.
- When characteristics were deemed redundant (in other words, the comparison results were similar), like in the case of family revenue classification and type of work (part-time/full-time), a single characteristic was presented.
- Finally, we must bear in mind that an important distinction exists between the definition of target population for the Readiness to Learn project and the SVOLM. The SVOLM children who were compared to Readiness to Learn project children had at least one French-speaking parent. The Readiness to Learn project children were chosen based on their parents’ “ayant droit” status, meaning that these children were eligible to attend French language school, and their parents intended to enroll them in a French school.

5.2 COMPARISON OF SOCIODEMOGRAPHIC VARIABLES

This section deals with the representativeness of Readiness to Learn project children versus those in the SVOLM sample based on several sociodemographic characteristics: the family (family structure, siblings and family size), parents’ level of education, total income and family language profile.

5.2.1 Representativeness of Readiness to Learn project communities

As previously mentioned, the 325 children in the Readiness to Learn project are from six communities, while the 789 children selected from the SVOLM for comparative analysis purposes are from six census areas. Comparisons between Readiness to Learn project and SVOLM communities are therefore carried out using geographic zones that are different in size.

Comparison of the number of children by community: A Chi square test suggests that the composition of the Readiness to Learn project and SVOLM samples is different in terms of the distribution of children across the communities ($X^2(5, N = 1\,114) = 60.27, p < 0.01$). In Table 5.1, we can see very different percentages⁴⁰ for the communities of Cornwall (22.2 % versus 8.9%), Durham (12.9% versus 39.2%) and Edmundston (26.2% versus 12.6%). Finally, we can see a more homogenous distribution of children across the communities, in that the range of percentages is lower in the Readiness to Learn project sample than in the SVOLM sample.

Table 5.1: Comparison of the size of the Readiness to Learn project and SVOLM samples by community

Communities	Readiness to Learn project	SVOLM	Significant differences between groups
	N (%)	N (%)	Chi square
Cornwall (southeast Ontario)	72 (22.2)	71 (8.9)	Yes***
Durham (rest of Ontario)	42 (12.9)	310 (39.2)	
Edmonton (Alberta)	38 (11.7)	126 (16)	
Edmundston (northern New Brunswick)	85 (26.2)	99 (12.6)	
Saint John (rest of New Brunswick)	33 (10.2)	32 (4.1)	
Orleans (Ontario–Ottawa)	55 (16.9)	151 (19.2)	

Note: Significance levels: *** < 0.1 %; ** < 1 %; * < 5 %.

5.2.2 Respondent's relationship to the child

Comparison of total samples: Table 5.2 shows that the percentage of respondents associated with the child's biological mother category is much higher in the Readiness to Learn project (88.9%) than in the SVOLM (51.3%). It should also be noted that the distribution of respondents between biological mother and father is more balanced for the SVOLM than the Readiness to Learn project. As a matter of fact, we observed that the division of biological mother and father respondents was 51.3% and 48.2% for the SVOLM versus 88.9% and 9.5% for the Readiness to Learn project. Thus, there is a marked contrast between the Readiness to Learn project and the SVOLM in the nature of the typical respondent. This contrast is most likely due to the sampling strategies used for the two surveys. It should be noted that the typical Readiness to Learn project respondent corresponds more to what we find in the National Longitudinal Study of Children and

⁴⁰ Every time that we mention percentages, they are calculated based on all of the observations for each sample (Readiness to Learn project or SVOLM; see section 5.1.2).

Youth (NLSCY) where, for cycle 1 (1994-1995), the child's biological mother represented 89.9% of respondents (Statistics Canada, 2006i).

There is no Chi square test in Table 5.2. This is due to an insufficient number of observations in the original SVOLM data for respondents in the adoptive mother category (less than 10 observations). Despite the absence of a Chi square test, Table 5.2 teaches us that the typical Readiness to Learn project respondent, i.e. the child's biological mother, is not representative according to the SVOLM sample. We have not presented categories of respondents by community due to the large number of blank cells.

Table 5.2: Comparison between the Readiness to Learn project and the SVOLM: respondent's relationship with the child

Respondent's relationship	Readiness to Learn project	SVOLM	Significant differences between groups
	N (%)	N (%)	Chi square
Biological mother	289 (88.9)	405 (51.3)	N/A
Biological father	31 (9.5)	380 (48.2)	
Adoptive mother	–	x	

Note: Significance levels: *** < 0.1 %; ** < 1 %; * < 5 %.

5.2.3 Child's gender

Comparison of total samples: Table 5.3 indicates that the Readiness to Learn project and the SVOLM contain 52.9% and 49.6% girls respectively as well as 47.1% and 50.4% boys. As the Chi square test confirms, the distribution of girls and boys is similar in both surveys [$\chi^2(1, N = 1114) = 1.04, p > 0.05$]. We have not presented the percentages of girls/boys by community since they are practically identical to those observed in the total sample of each survey.

Table 5.3: Comparison of the number of boys/girls in the Readiness to Learn project and the SVOLM

Gender	Readiness to Learn project	SVOLM	Significant differences between groups
	N (%)	N (%)	Chi square
Boy	153 (47.1)	398 (50.4)	No
Girl	172 (52.9)	391 (49.6)	

Note: Significance levels: *** < 0.1 %; ** < 1 %; * < 5 %.

5.2.4 Family structure, siblings and family size

Family structure

Comparison of total samples: In order to compare the family structures in which the Readiness to Learn project children and SVOLM children are being raised (see Table 5.4), we had to redefine the Readiness to Learn project families so that they could be categorized as either single-parent or two-parent. The latter category regroups intact and blended families where two parents (or one parent and his/her spouse) live with the child. The single-parent category includes families where only a single parent lives in the home.

It should be noted that the child's mother/father could be either a biological parent or an adoptive parent (see Table 5.2). We would also like to mention that same-sex couples were excluded from the analysis, along with any children raised by someone other than their (biological or adoptive) mother and father.

As illustrated by the Chi square test, the distribution of Readiness to Learn project children in single- or two-parent homes is representative of the Francophone minority population in the six geographic areas based on SVOLM data [$\chi^2(1, N = 1\ 114) = 1.09, p > 0.05$]. We have not presented the percentage of single- and two-parent families by community because, on one hand, they are practically identical to those observed in the total sample for each survey and, on the other hand, there were several blank cells due to a lack of observations for single-parent families.

Table 5.4: Comparison between the Readiness to Learn project and the SVOLM: number of single- and two-parent families

Family structure	Readiness to Learn project	SVOLM	Significant differences between groups
	N (%)	N (%)	Chi square
Single-parent	29 (8.9)	87 (11)	No
Two-parent	296 (91.1)	702 (89)	

Note: Significance levels: *** < 0.1 %; ** < 1 %; * < 5 %.

Siblings

Comparison of total samples: Table 5.5 indicates that the median number of children per respondent (family) is two for the Readiness to Learn project and the SVOLM. However, there are slightly more families with exactly two children in the Readiness to Learn project (56.9%) than in the SVOLM (50.4%). Also, there are more families with three or more children in the SVOLM (30.1%) than in the Readiness to Learn project (22.5%). On the other hand, the number of families with an only child, approximately 20%, is about the same in both surveys. A Chi square test shows that the distribution of the number of children per respondent is significantly different in the two samples [$\chi^2(2, N = 1\ 111) = 6.73, p < 0.05$]. We have not presented the number of children per family by community since they are similar to those observed in the total sample for each survey.

Table 5.5: Comparison between the Readiness to Learn project and the SVOLM: number of children per respondent

Number of children	Readiness to Learn project	SVOLM	Significant differences between groups
	N (%)	N (%)	Chi square
1 child	67 (20.6)	154 (19.5)	Yes*
2 children	185 (56.9)	396 (50.4)	
3 children or more	73 (22.5)	236 (30.1)	

Note: Significance levels: *** < 0.1 %; ** < 1 %; * < 5 %.

Family Size

Comparison of total samples: According to Table 5.6, the median family size is four, regardless of the sample being examined. Also, according to Table 5.6, families of four are the most common in the Readiness to Learn project and the SVOLM. These families represent approximately half the sample in each survey. The rest of the children in each sample are divided fairly evenly (a quarter) between families of three or less and families of five or more. A Chi square test suggests that there is no significant difference between the Readiness to Learn project and the SVOLM [$X^2(2, N = 1\ 112) = 4.33, p > 0.05$] in the distribution of the family size. We have not presented the distribution of family size by community because it is similar to that observed in the total sample for each survey.

Table 5.6: Comparison of family size¹ in the Readiness to Learn project and the SVOLM

Number of people	Readiness to Learn project	SVOLM	Significant differences between groups
	N (%)	N (%)	Chi square
3 people or less	81 (24.9)	186 (23.6)	No
4 people	173 (53.2)	382 (48.5)	
5 people or more	71 (21.8)	219 (27.8)	

Note: Significance levels: *** < 0.1 %; ** < 1 %; * < 5 %.

¹ The number of people in a family includes only the number of parents and the number of children.

5.2.5 Level of education

Mothers' level of educational

Comparison of total samples: Table 5.7 reveals three key points. First, Readiness to Learn project mothers have a higher average level of education than mothers in the SVOLM sample. In fact, close to 80% of Readiness to Learn project mothers have a college diploma (DEC) or

university degree, while only about 75% of SVOLM mothers have an equivalent level of education. Second, there are almost as many mothers with a college diploma (39.1%) as there are with a university degree (40.6%) in the Readiness to Learn project. Third, there are more mothers in the SVOLM who attended university (47.4%) than in the Readiness to Learn project (40.6%). A Chi square test confirmed that the distribution of Readiness to Learn project mothers across the different levels of education is not representative of the Francophone minority population in the six geographic areas based on SVOLM data [χ^2 (2, N = 1 114) = 13.5, $p < 0.01$].

Table 5.7: Comparison of Readiness to Learn project and SVOLM mothers' level of education

Level of education	Readiness to Learn project	SVOLM	Significant differences between groups
	N (%)	N (%)	Chi square
Secondary school diploma or less OR a few postsecondary courses	66 (20.3)	195 (24.7)	Yes**
College diploma/certificate (e.g. trade school)	127 (39.1)	220 (27.9)	
University degree (bachelor's; master's; PhD)	132 (40.6)	374 (47.4)	

Note: Significance levels: *** < 0.1 %; ** < 1 %; * < 5 %.

Comparisons by community: Table 5.8 presents mothers' level of education by community for the Readiness to Learn project and the SVOLM. For the communities of Durham, Edmonton and Saint John, a Chi square test suggests that Readiness to Learn project and SVOLM mothers have a similar distribution across the different levels of education ($p > 0.05$). However, a Chi square test also reveals that this is not the case for the communities of Cornwall, Edmundston and Orleans ($p < 0.05$). Thus, for half of the Readiness to Learn project communities, the mothers' distribution across the different levels of education is not representative of the Francophone minority population in their respective area based on SVOLM data.

Table 5.8: Comparison, by community, of Readiness to Learn project and SVOLM mothers' level of education

Level of education	Readiness to Learn project			SVOLM			Significant differences between groups
	Secondary school diploma or less OR a few post-secondary courses	College diploma or certificate	University degree	Secondary school diploma or less OR a few post-secondary courses	College diploma or certificate	University degree	
	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)	Chi square
Cornwall (southeast Ontario)	24 (33.3)	31 (43.1)	17 (23.6)	57 (42.9)	28 (21.4)	47 (35.8)	Yes**
Durham (rest of Ontario)	–	15 (35.7)	22 (52.4)	21 (15.4)	40 (29.6)	75 (55.1)	No
Edmonton (Alberta)	–	17 (44.7)	18 (47.4)	24 (18.2)	51 (38.4)	57 (43.4)	No
Edmundston (northern New Brunswick)	19 (22.4)	32 (37.6)	34 (40)	58 (38.6)	54 (36.2)	38 (25.2)	Yes*
Saint John (rest of New Brunswick)	–	11 (33.3)	15 (45.5)	41 (35.6)	34 (28.9)	41 (35.5)	No
Orleans (Ontario–Ottawa)	–	21 (38.2)	26 (47.3)	36 (29.2)	16 (13.2)	71 (57.7)	Yes***

Note: Significance levels: *** < 0.1 %; ** < 1 %; * < 5 %.

Fathers' level of education

Comparison of total samples: Table 5.9 indicates that a comparison between Readiness to Learn project and SVOLM fathers' educational level resembles the comparison between mothers. As was the case for mothers (see Table 5.7), there are more fathers who attended university in the SVOLM (43.8%) than in the Readiness to Learn project (34.8%). However, Readiness to Learn project fathers are generally more educated than SVOLM fathers. Nearly 75% of them have a college diploma (DEC) or university degree, while less than 70% of SVOLM fathers have an equivalent level of education. As was the case for Readiness to Learn project mothers, we can see just as many Readiness to Learn project fathers have a college diploma or university degree (34.8 %). Finally, a Chi square test suggests that the distribution of Readiness to Learn project fathers across the different educational levels is not representative of the Francophone minority population in the six geographic areas based on SVOLM data [$X^2(2, N = 1\ 106) = 17.3, p < 0.001$].

Table 5.9: Comparison of Readiness to Learn project and SVOLM fathers' level of education

Level of education	Readiness to Learn project	SVOLM	Significant differences between groups
	N (%)	N (%)	Chi square
Secondary school diploma or less OR a few postsecondary courses	91 (28)	258 (32.7)	Yes***
College diploma/certificate (e.g. trade school)	113 (34.8)	185 (23.5)	
University degree (bachelor's; master's; PhD)	113 (34.8)	346 (43.8)	

Note: Significance levels: *** < 0.1 %; ** < 1 %; * < 5 %.

Comparisons by community: Table 5.10 presents Readiness to Learn project and SVOLM fathers' level of education by community. According to a Chi square test, Saint John is the only community for which the fathers do not have a representative distribution across the different levels of education based on SVOLM data [$X^2(2, N = 149) = 7.59, p < 0.05$]. For this community, the majority of Readiness to Learn project fathers have a university degree (48.5%) followed by those with a college diploma (33.3%). On the other hand, a small percentage of SVOLM fathers living in the census area covering Saint John have a college diploma or university degree (28.3% and 28.7% respectively). A large percentage of SVOLM fathers living in this census area only have a secondary school diploma (43.1%). However, for the rest of the communities, the distribution of Readiness to Learn project fathers across the different levels of education is representative of the Francophone minority population in their respective area based on SVOLM data ($p > 0.05$).

Table 5.10: Comparison, by community, of Readiness to Learn project and SVOLM fathers' level of education

Level of education	Readiness to Learn project			SVOLM			Significant differences between groups
	Secondary school diploma or less OR a few post-secondary courses	College diploma or certificate	University degree	Secondary school diploma or less OR a few post-secondary courses	College diploma or certificate	University degree	
	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)	Chi square
Cornwall (southeast Ontario)	24 (35.8)	33 (49.3)	10 (14.9)	66 (50.3)	43 (32.3)	23 (17.4)	No
Durham (rest of Ontario)	–	15 (35.7)	20 (47.6)	39 (28.4)	26 (19.1)	71 (52.5)	No

Level of education	Readiness to Learn project			SVOLM			Significant differences between groups
	Secondary school diploma or less OR a few post-secondary courses	College diploma or certificate	University degree	Secondary school diploma or less OR a few post-secondary courses	College diploma or certificate	University degree	
	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)	Chi square
Edmonton (Alberta)	–	11 (29.7)	20 (54.1)	33 (25.1)	43 (32.3)	56 (42.6)	No
Edmundston (northern New Brunswick)	37 (44)	26 (31)	21 (25)	84 (56.5)	41 (27.5)	24 (16.1)	No
Saint John (rest of New Brunswick)	–	11 (33.3)	16 (48.5)	50 (43.1)	33 (28.3)	33 (28.7)	Yes*
Orleans (Ontario–Ottawa)	11 (20.4)	17 (31.5)	26 (48.1)	27 (21.6)	21 (17.3)	76 (61.1)	No

Note: Significance levels: *** < 0.1 %; ** < 1 %; * < 5 %.

5.2.6 Total family income

Comparison of total samples: Table 5.11 shows that Readiness to Learn project and SVOLM families are similarly distributed within the income classifications considered. Thus, the majority of children from the two samples live in a family whose total income is \$60,000 or more per year. Also, the median total family income for both samples falls within the same income classification (\$60,000 or more per year). A Chi square test confirms that the distribution of Readiness to Learn project parents within the different income classifications is representative of the Francophone minority population in the six geographic areas based on SVOLM data [$X^2(5, N = 1\,098) = 5.02, p > 0.05$]. Taken together, the above observations and test results suggest that Readiness to Learn project children are able to benefit from a good quality/quantity of material resources for their development.

Comparisons by community: We have not presented the distribution of families by income classification by community since it is similar to that observed in the total sample for each survey. We will simply note that the income classification that encompasses the median total income for Cornwall (Readiness to Learn project) and northern New Brunswick (SVOLM) [\$50,000 to \$59,999] differs from that of the total sample for both surveys (\$60,000 or more per year).

Table 5.11: Comparison between Readiness to Learn project and SVOLM: families by income classification

Income classification	Readiness to Learn project	SVOLM	Significant differences between groups
	N (%)	N (%)	Chi square
\$10,000 or less	16 (4.9)	54 (6.8)	No
\$20,000 to \$29,999	14 (4.3)	23 (2.9)	
\$30,000 to \$39,999	18 (5.5)	64 (8.2)	
\$40,000 to \$49,999	20 (6.2)	57 (7.2)	
\$50,000 to \$59,999	35 (10.8)	95 (12)	
\$60,000 or more	206 (63.4)	496 (62.9)	

Note: Significance levels: *** < 0.1 %; ** < 1 %; * < 5 %.

5.2.7 Family language profile

First language learned and still understood: mothers

Comparison of total samples: Table 5.12 indicates that the majority of mothers from the Readiness to Learn project (68.9%) and SVOLM (58.3%) samples are solely of Francophone origin (1st row in the table). Next are mothers of Anglophone and/or other origin (3rd row in the table; English only, English and another language, or other language(s)), which represents 23.1% of Readiness to Learn project mothers and 32.2% of SVOLM mothers. Finally, 8% of Readiness to Learn project mothers are of ‘bilingual’ origin (2nd row in the table; English and French equally, French and another language), versus 9.6% for SVOLM mothers. A Chi square test suggests that the distribution of Readiness to Learn project mothers across the different categories of mother tongue is not representative of the Francophone minority population in the six geographic areas based on SVOLM data [$\chi^2(2, N = 1\,114) = 11.28, p < 0.01$].

Table 5.12: Comparison between Readiness to Learn project and SVOLM: mothers grouped by mother tongue

Mother tongue	Readiness to Learn project	SVOLM	Significant differences between groups
	N (%)	N (%)	Chi square
French only	224 (68.9)	460 (58.3)	Yes**
English and French equally OR French and another language	26 (8)	75 (9.6)	
English only OR English and another language OR other language(s)	75 (23.1)	254 (32.2)	

Note: Significance levels: *** < 0.1 %; ** < 1 %; * < 5 %.

Comparisons by community: We can observe in Table 5.13 that the mother tongue profile for the mothers, by community, is similar to that of the total sample for each survey. Every Readiness to Learn project and SVOLM community has very few mothers of “bilingual” origin (column 2, which is blank: English and French equally OR French and another language). Likewise, the majority of mothers in Readiness to Learn project and SVOLM communities are of Francophone origin (column 1; French only), with the exception of Durham for the SVOLM. It should be noted that in two thirds of the communities, there is generally a higher number of mothers of Francophone origin in the Readiness to Learn project than in the SVOLM.

Despite a significant number of blank cells for Readiness to Learn project mothers of Anglophone and/or other origin (column 3; English only, English and another language, or other language(s)), this category appears to remain the second most popular after mothers of Francophone origin for the SVOLM and the Readiness to Learn project. Due to the systematic absence of a sufficient number of mothers of “bilingual” origin for the SVOLM, we did not perform a Chi square test by community.

Table 5.13: Comparison, by community, of Readiness to Learn project and SVOLM mothers grouped by mother tongue categories (1, 2 and 3) [†]

Mother tongue categories	Readiness to Learn project			SVOLM			Significant differences between groups
	1	2	3	1	2	3	
	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)	Chi square
Cornwall (southeast Ontario)	40 (55.6)	–	28 (38.9)	98 (74.5)	x	26 (19.8)	N/A

Mother tongue categories	Readiness to Learn project			SVOLM			Significant differences between groups
	1	2	3	1	2	3	
	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)	Chi square
Durham (rest of Ontario)	19 (45.2)	–	16 (38.1)	53 (39.2)	x	58 (42.5)	N/A
Edmonton (Alberta)	28 (73.7)	–	–	79 (59.5)	x	49 (36.7)	N/A
Edmundston (northern New Brunswick)	82 (96.5)	–	–	141 (94.7)	x	X	N/A
Saint John (rest of New Brunswick)	19 (57.6)	–	–	78 (66.9)	x	31 (26.8)	N/A
Orleans (Ontario–Ottawa)	36 (65.5)	–	13 (23.6)	78 (62.9)	x	41 (33.1)	N/A

Note: Significance levels: *** < 0.1 %; ** < 1 %; * < 5 %.

*1 - French only.

†2 – English and French equally OR French and another language.

†3 - English only OR English and another language OR other language(s).

First language learned and still understood: fathers

Comparison of total samples: Table 5.14 shows the language profile of Readiness to Learn project and SVOLM fathers based on their mother tongue. At first glance, the fathers' language profile appears to be similar to the mothers' profile. However, there is a slightly higher number of fathers of Anglophone and/or other origin (3rd row in the table; English only, English and another language, or other language(s)) than fathers of Francophone origin (1st row in the table; French only) in the SVOLM (47.7% versus 46.7%). In the Readiness to Learn project, the majority of fathers are of Francophone origin (54.5%), followed by fathers of Anglophone and/or other origin (35.4%). As was the case for the mothers, there are very few fathers of both Francophone and Anglophone origin, or of Francophone and other origin (2nd row in the table; English and French equally, French and another language), with 7.1% in the Readiness to Learn project and 5.6% in the SVOLM.

A Chi square test shows that the distribution of Readiness to Learn project fathers across the different categories of mother tongue is not representative of the Francophone minority population in the six geographic areas based on SVOLM data [χ^2 (2, N = 1 101) = 11.52, $p < 0.01$].

Table 5.14: Comparison between the Readiness to Learn project and the SVOLM: fathers grouped by mother tongue

Mother tongue	Readiness to Learn project	SVOLM	Significant differences between groups
	N (%)	N (%)	Chi square
French only	177 (54.5)	367 (46.7)	Yes**
English and French equally OR French and another language	23 (7.1)	44 (5.6)	
English only OR English and another language OR other language(s)	115 (35.4)	375 (47.7)	

Note: Significance levels: *** < 0.1 %; ** < 1 %; * < 5 %.

Comparisons by community: In Table 5.15, it can be observed that, contrary to the mothers, the mother tongue profile of Readiness to Learn project fathers by community is different from the total sample. We find more fathers of Anglophone and/or other origin (column 3; English only, English and another language, or other language(s)) than fathers of Francophone origin (column 1; French only) in half of the Readiness to Learn project communities (Cornwall, Durham and Saint John). Thus, the finding that the majority of Readiness to Learn project fathers of Francophone origin is certainly due to the community of Edmundston, where a large majority of fathers are of Francophone origin (91.7%). Without this factor, it is quite likely that the majority of Readiness to Learn project fathers would have been of Anglophone origin as was the case for SVOLM fathers.

An analysis of the language profile for SVOLM sample fathers by community reveals an important point. In two thirds of the communities, the language profile for SVOLM fathers is the opposite of Readiness to Learn project fathers. Hence, for Cornwall and Saint John, where we find a majority of fathers of Anglophone origin in the Readiness to Learn project, the majority of SVOLM fathers are of Francophone origin. The reverse is the case for the communities of Edmonton and Orleans.

Due to the absence across the board of a sufficient number of fathers of “bilingual” origin for the SVOLM, we did not perform a Chi square test by community.

Table 5.15: Comparison, by community, of Readiness to Learn project and SVOLM fathers grouped by mother tongue categories (1, 2 and 3) [†]

Mother tongue categories	Readiness to Learn project			SVOLM			Significant differences between groups
	1	2	3	1	2	3	
	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)	Chi square
Cornwall (southeast Ontario)	29 (44.6)	-	32 (49.2)	86 (65.5)	x	39 (29.5)	N/A
Durham (rest of Ontario)	13 (31)	-	22 (52.4)	43 (31.3)	x	81 (59.9)	N/A
Edmonton (Alberta)	19 (51.4)	-	15 (40.5)	49 (37.5)	x	79 (59.7)	N/A
Edmundston (northern New Brunswick)	77 (91.7)	-	-	138 (93.2)	x	X	N/A
Saint John (rest of New Brunswick)	-	-	21 (63.6)	78 (67.8)	x	35 (30.6)	N/A
Orleans (Ontario–Ottawa)	30 (55.6)	-	20 (37)	55 (44.1)	x	63 (50.8)	N/A

Note: Significance levels: *** < 0.1 %; ** < 1 %; * < 5 %.

*1 - French only.

†2 - English and French equally OR French and another language.

†3 - English only OR English and another language OR other language(s).

First language learned and still understood: children

Comparison of total samples: The mother tongue of the Readiness to Learn project children is taken from the consent form completed by the parents. For the SVOLM, the child's mother tongue is deduced from the following question (Statistics Canada, 2006h, p. 35): "What is the language that [child's name] first learned at home in childhood and still understands?".

Table 5.16 shows that Readiness to Learn project and SVOLM sample children are very different with respect to their mother tongue: Readiness to Learn project children resemble their mothers more than their fathers, while the opposite is true for SVOLM children. More than two thirds of Readiness to Learn project children are Francophones (1st row in Table 5.16; French only; 68.6%) as are their mothers (see 1st row of Table 5.12; 68.9%). On the other hand, the majority of SVOLM children are of Anglophone and/or other origin (3rd row in Table 5.16; English only, English and another language, or other language(s); 46.5%) as are their fathers (see 3rd row in Table 5.14; 47.7%). Finally, the percentage of bilingual children (2nd row in Table 5.16; English and French equally, French and another language) is practically identical in both

samples, with 11.7% bilingual children in the Readiness to Learn project and 11.3% in the SVOLM.

A Chi square test confirmed that the distribution of Readiness to Learn project children across the different categories of mother tongue is not representative of the Francophone minority population in the six geographic areas based on SVOLM data [$X^2(2, N = 1\,086) = 84.12, p < 0.001$]. These observations and the results of the Chi square test are not surprising. In fact, the 2006 SVOLM user's guide provides a reminder (p. 7) that: "It is therefore not necessary for a child to be part of a minority in order to be included in the [SVOLM] sample." This helps in part to explain why some of the SVOLM children speak English and/or another language.

Table 5.16: Comparison between the Readiness to Learn project and the SVOLM: children grouped by mother tongue

Mother tongue	Readiness to Learn project	SVOLM	Significant differences between groups
	N (%)	N (%)	Chi square
French only	223 (68.6)	306 (38.9)	Yes***
English and French equally OR French and another language	38 (11.7)	89 (11.3)	
English only OR English and another language OR other language(s)	64 (19.7)	366 (46.5)	

Note: Significance levels: *** < 0.1 %; ** < 1 %; * < 5 %.

Comparisons by community: Table 5.17 presents the mother tongue of Readiness to Learn project and SVOLM children by community. This table shows a much greater contrast in the children, based on their mother tongue, than the image portrayed using the total samples in Table 5.16. Children in the communities of Cornwall and Orleans have the same language profile in both the Readiness to Learn project and the SVOLM according to a Chi square test ($p > 0.05$). And while it was not possible to do a test for Edmundston (less than 10 observations for some of the categories), a huge majority of the children in this community were Francophones for the purposes of both surveys (column 1; French only), with 97.6% for the Readiness to Learn project and 94.1% for the SVOLM.

Furthermore, according to a Chi square test, children in the communities of Durham [$X^2(2, N = 169) = 31.56, p < 0.001$] and Saint John [$X^2(2, N = 148) = 10.24, p < 0.01$] do not have a similar distribution in terms of mother tongue in the Readiness to Learn project and the SVOLM. And while it was not possible to do a test for Edmonton (less than 10 observations for some of the categories), we noted that the majority of Readiness to Learn project children in this community are Francophones (column 1; French only; 73.7%), while the majority of SVOLM children speak English and/or another language (column 3; English only, English and another language, or other language(s); 73.9%).

A point that stands out in Table 5.17 is that five of the six Readiness to Learn project communities consist primarily of Francophone children (column 1; French only). The community of Saint John is the only exception since the children are almost equally distributed between those speaking English and/or another language (column 3; English only, English and another language, or other language(s); 36.4%), those who are bilingual (column 2; English and French equally OR French and another language; 30.3%) and who speak French (column 1; French only; 33.3%). Finally, it should be noted that Table 5.17 indicates that the majority of children in half of the six SVOLM regions are Francophones.

Table 5.17: Comparison, by community, of Readiness to Learn project and SVOLM children grouped by mother tongue categories (1, 2 and 3) [†]

Mother tongue categories	Readiness to Learn project			SVOLM			Significant differences between groups
	1	2	3	1	2	3	
	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)	Chi square
Cornwall (southeast Ontario)	37 (51.4)	–	30 (41.7)	81 (61.3)	14 (10.2)	38 (28.4)	No
Durham (rest of Ontario)	20 (47.6)	13 (31)	–	18 (13.6)	21 (15.7)	88 (64.7)	Yes***
Edmonton (Alberta)	28 (73.7)	–	–	21 (16.2)	X	98 (73.9)	N/A
Edmundston (northern New Brunswick)	83 (97.6)	–	–	140 (94.1)	X	X	N/A
Saint John (rest of New Brunswick)	11 (33.3)	10 (30.3)	12 (36.4)	50 (43.1)	10 (9)	55 (47.9)	Yes**
Orleans (Ontario–Ottawa)	44 (80)	–	–	77 (62.4)	16 (13.2)	27 (21.7)	No

Note: Significance levels: *** < 0.1 %; ** < 1 %; * < 5 %.

[†]1 - French only.

[†]2 - English and French equally OR French and another language.

[†]3 - English only OR English and another language OR other language(s).

First official language spoken (FOLS): mothers

Comparison of total samples: The method used to determine the first official language spoken (FOLS) was the same for both the Readiness to Learn project and the SVOLM. The categories are therefore easy to compare between surveys. However, it is important to mention that FOLS information is only available for the respondent, and not for both parents, in the SVOLM. It must be kept in mind that in order to be included in the SVOLM sample, the respondent had to be a member of the French language minority. This results in a highly significant selection bias where there is a much higher probability that the SVOLM respondent's

FOLS will be French. Since the child's mother represents slightly more than half of the SVOLM respondents (see 1st row in Table 5.2; 51.3%), FOLS information is only available for slightly more than half of the SVOLM mothers. As a result, there is a noticeable drop in the number of SVOLM observations (see Table 5.18; N = 402 rather than N = 789) that can be compared to Readiness to Learn project observations. We should note that the preceding comments also apply to the FOLS for SVOLM fathers. Hence, comparisons of SVOLM and Readiness to Learn project FOLS (mothers/fathers) must be interpreted with caution.

The language profiles of mothers from the Readiness to Learn project and SVOLM samples, based on their FOLS, are relatively similar according to Table 5.18. French (1st row in Table 5.18) is the FOLS for the majority of Readiness to Learn project (71.1%) and SVOLM (87.4%) mothers. Next is English (2nd row in Table 5.18), then English and French (3rd row in Table 5.18), with 20.6% and 7.9% respectively for Anglophone Readiness to Learn project and SVOLM mothers, and 7.7% and 4.7% for bilingual mothers.

A Chi square test suggests that the distribution of Readiness to Learn project mothers across the FOLS categories is not representative of the Francophone minority population in the six geographic areas based on SVOLM data [χ^2 (2, N = 725) = 29.68, $p < 0.001$]. However, a selection bias on the part of SVOLM respondents in favour of the French language (almost all of the SVOLM mothers indicated French as their FOLS; 87.4%) taints the reliability of the test results in presenting the true representativity of the distribution of Readiness to Learn project mothers across the FOLS categories.

Table 5.18: Comparison between the Readiness to Learn project and the SVOLM: mothers grouped by first official language spoken (FOLS)

FOLS	Readiness to Learn project	SVOLM	Significant differences between groups
	N (%)	N (%)	Chi square
French	231 (71.1)	351 (87.4)	Yes***
English	67 (20.6)	32 (7.9)	
English and French	25 (7.7)	19 (4.7)	

Note: Significance levels: *** < 0.1 %; ** < 1 %; * < 5 %.

Comparisons by community: We have not presented the FOLS results for mothers by community because, on one hand, there is a significant lack of information in the table (approximately 62% of the cells are blank) and, on the other hand, observable information is practically identical to that found in Table 5.18.

First official language spoken (FOLS): fathers

Comparison of total samples: We can see in Table 5.19 that French (1st row) is the FOLS for the majority of fathers in the Readiness to Learn project (58.2%) and SVOLM (82.1%) samples. This is followed by English (2nd row in Table 5.19) for Readiness to Learn project fathers (33.5%), and English and French (3rd row in Table 5.19) for SVOLM fathers (14.7%). The

English and French FOLS category did not apply to very many of the Readiness to Learn project fathers (4.6%); likewise, the English category did not apply to many of the SVOLM fathers (3.2%). We can therefore conclude that French is the FOLS for the majority of Readiness to Learn project and SVOLM fathers.

A Chi square test suggests that the distribution of Readiness to Learn project fathers across the FOLS categories is not representative of the Francophone minority population for the six geographic areas based on SVOLM data [$X^2(2, N = 693) = 126.34, p < 0.001$]. However, as was the case for the mothers, the language selection bias of SVOLM respondents (almost all SVOLM fathers indicated French as their FOLS; 82.1 %) taints the reliability of the test results in presenting the true representativeness of the distribution of Readiness to Learn project fathers across the FOLS categories.

Table 5.19: Comparison between the Readiness to Learn project and the SVOLM: fathers grouped by first official language spoken (FOLS)

FOLS	Readiness to Learn project	SVOLM	Significant differences between groups
	N (%)	N (%)	Chi square
French	189 (58.2)	312 (82.1)	Yes***
English	109 (33.5)	12 (3.2)	Yes***
English and French	15 (4.6)	56 (14.7)	

Note: Significance levels: *** < 0.1 %; ** < 1 %; * < 5 %.

Comparisons by community: We have not presented the FOLS results for fathers by community because, on one hand, there is a significant lack of information in the table (approximately 53% of the cells are blank) and, on the other hand, the information presented is practically identical to that found in Table 5.19.

5.3 DISCUSSION

This chapter seeks to establish the external validity level of the Readiness to Learn project results. In other words, we are attempting to determine to what degree the Readiness to Learn project results would be observed if the preschool program was administered to another sampling of Francophone minority children. External validity essentially depends on the representativeness of the Readiness to Learn project sample in relation to the target population—in this case, Francophone minority children living in the six census areas where the Readiness to Learn project communities are located. To do this, we compared the Readiness to Learn project children to the children in Statistics Canada's Survey on the Vitality of Official-Language Minorities (SVOLM).

Findings

Based on the comparisons with SVOLM data, presented in the previous sections, Readiness to Learn project children are representative of “young Francophone minorities” living within the same census areas, in terms of:

- Gender (girl/boy);
- Family structure (single-parent/two-parent);
- Family size (three people or less, etc.);
- Total family income (\$10,000 or less, etc.).

On the other hand, also based on SVOLM data, Readiness to Learn project children are not representative of “young Francophone minorities” living within the same census areas, in terms of:

- Percentage of children per community;
- Relationship to the respondent (biological mother/father, etc.);
- Number of children in the family (only child, etc.);
- Mothers’ and fathers’ level of education (secondary school diploma or less, etc.);
- Mother tongue spoken by mothers, fathers and the children themselves (French only, etc.);
- First official languages spoken by mothers and fathers (French only, etc.).

At first glance, the reader might think that Readiness to Learn project children are not generally representative of “young minority Francophones” living in the same census areas. It should be noted that Readiness to Learn project children differ from SVOLM children with regards to eight of the twelve characteristics being studied. However, the results need to be clarified. We argue that the first two inconsistent characteristics are not particularly relevant to judging the representativeness of the Readiness to Learn project children and, by extension, the external validity of the Readiness to Learn project. The distribution of children across the communities participating in the Readiness to Learn project is actually measured at the community level. For SVOLM, the percentage of children per community is measured at the census area level. Each census area is a large area that includes many communities other than the ones participating in the Readiness to Learn project. Unless the demographic weighting of each Readiness to Learn project community is close enough to the demographic weighting of each census area, it is normal to find that the distribution of children across the communities differs between the Readiness to Learn project and SVOLM populations. Next, due to the emphasis placed on the importance of choosing a respondent who knows the child well (in terms of development) within the framework of the Readiness to Learn project program, the majority of respondents who completed the Readiness to Learn project questionnaire (88.9%) were mothers. This was also the case for cycle 1 (1994-1995) of the NLSCY, where the child’s biological mother represented 89.9% of the respondents (Statistics Canada, 2006i). On the other hand, the SVOLM had broader objectives than the Readiness to Learn project (see section 5.1.1) and was based on the 2006 census population. In using the census population to select a group of Francophone minority parents, it is quite likely that, on average, one respondent out of two

would be a man. It follows that there would be a fairly even split between father and mother respondents to the SVOLM (see Table 5.2).

With respect to the results on socio-economic data, no significant differences were observed between the children in the Readiness to Learn project and SVOLM samples in terms of family size (see Table 5.6) and family income (see Table 5.11). However, based on SVOLM data, the number of children per family in the Readiness to Learn project (see Table 5.5) is not representative of the Francophone minority population in the six geographic areas corresponding to the Readiness to Learn project communities. In terms of communities, Readiness to Learn project and SVOLM fathers have a similar education profile, with the exception of the community of Saint John (see Table 5.10). There was a significant difference between the two samples with regards to the mothers' educational level. Mothers in only half of the Readiness to Learn project communities have an educational level that is representative of their respective Francophone minority population based on SVOLM data (see Table 5.8).

Comparative analyses of the Readiness to Learn project and SVOLM children and parents' language profiles show marked differences between the two populations. We argue that these differences were to be expected given the different recruitment and sampling strategies used for the Readiness to Learn project and the SVOLM (see section 5.1.1). The sampling strategy used for the SVOLM helped to target a greater number of individuals who could potentially identify with the Francophone community. It also offered an opportunity to take into account individuals whose mother tongue is French (alone or in combination with other languages) in addition to newcomers with a mother tongue other than French or English who have a working knowledge of French. The sampling strategy used for the Readiness to Learn project specifically targeted children whose parents have "ayant droit" status and intended to register their child in a French school⁴¹. By definition, this strategy encompassed a much smaller pool of Francophone minority members (see Forgues and Landry, 2006, for a discussion of the consequences of having different statistical definitions).

Giving consideration to the different sampling strategies used for the Readiness to Learn project and the SVOLM helps to shed light on the language profile results. Due to their "ayant droit" status, we see a higher number of Readiness to Learn project parents reporting French as their mother tongue compared to SVOLM parents (see tables 5.12 to 5.15). On the other hand, Readiness to Learn project parents are, on average, more Anglophone than SVOLM parents based on their first official language spoken (FOLS) (see tables 5.18 and 5.19). It is interesting to note that the majority of Readiness to Learn project children (68.6%) learned French as their mother tongue, contrary to SVOLM children (38.9 %; see Table 5.16).

A joint analysis of these results points to a different linguistic trajectory between the Readiness to Learn project parents and children and those in the SVOLM. While the language profile for Readiness to Learn project parents remains relatively similar in terms of mother tongue and FOLS, we can see a very high percentage of SVOLM parents reporting French as their FOLS in combination with a lower percentage reporting French as their mother tongue. The majority of Readiness to Learn project children learned French only as their mother tongue, while a higher percentage of SVOLM children learned English only and/or another language as

⁴¹ See section 23 of the *Canadian Charter of Rights and Freedoms* for the definition of the term "ayant droit", available on the internet at the following site: http://laws.justice.gc.ca/en/charter/const_fr.html#garantie.

their mother tongue. Together, these observations suggest a different intergenerational language transition between the Readiness to Learn project and SVOLM populations. The only real distinction between the two populations appears to be the number of immigrants. The percentage is much higher in the SVOLM (24.3%) than in the Readiness to Learn project (4.3%)⁴². It is therefore possible that this difference in composition may be the source of the difference in the language dynamic between the SVOLM and Readiness to Learn project populations.

Result limitations

Although at first glance it would seem relevant to compare Readiness to Learn project and SVOLM children in order to assess the representativeness of the Readiness to Learn project sample, several factors contributed to reducing the relevance of such a comparison. Let us briefly recall the main “discord” factors affecting the comparison between the Readiness to Learn project and the SVOLM:

1. The base population for both the Readiness to Learn project and SVOLM samples is the Francophone minority population. However, Readiness to Learn project children were selected based on the “ayant droit” status of their parents, and their intention to enroll their children in French school. SVOLM children were selected based on their parents’ knowledge of French and not the intention/possibility of enrolling their children in a French school. These different sampling strategies resulted in very divergent levels of immigrant parents in the two samples;
2. The SVOLM geographic areas are census areas that include many other communities in addition to those participating in the Readiness to Learn project;
3. There is a difference in the children’s age range between the Readiness to Learn project and the SVOLM.

Implications for the external validity

Basically, two conclusions can be drawn from this chapter. According to SVOLM data:

1. Readiness to Learn project children are relatively representative of “young Francophone minorities” living in the same census areas in terms of family socio-economic status;
2. Readiness to Learn project children are not representative of “young Francophone minorities” in terms of their family’s language profile (mother tongue of the mother, father and child, and parents’ FOLS).

The first conclusion is reassuring in terms of the socio-economic representativeness of the Readiness to Learn project children. It implies that by oversampling young Francophone minority children attending a daycare centre (close to 70% of the children in the base survey), the Readiness to Learn project led to a sample whose socio-economic characteristics are, on average, equivalent to those of the French language minority population with young children living in the same census areas.

⁴² The reader will recall that we only have an approximation of the number of immigrants participating in the Readiness to Learn project, based on the mother tongue reported by the respondent on the consent form (see section 5.1.1 *Description of the SVOLM*).

The second conclusion, stating that Readiness to Learn project children are not representative of “young Francophone minorities” in terms of their family’s language profile, is not surprising. The growing number of newcomers in the Francophone minority population defines the limits of the external validity of the results drawn from the Readiness to Learn project. In other words, the degree to which the Readiness to Learn project results are generalizable depends on the percentage of newcomers in the Francophone minority population that use daycare services. If the percentage is relatively low, as appears to be the case for the Readiness to Learn project, there is a high probability that the results can be reproduced in another Francophone minority population. On the other hand, if a relatively high percentage of Francophone minority immigrants are using daycare services then there is a lower probability of reproducing the Readiness to Learn project results in another Francophone minority population.

6.0 Community survey results

The aim of this chapter is to establish a profile of the participating communities' characteristics and to identify the resources and services available to Francophones in these communities. These community factors are known to affect child development. This information was obtained through the community survey administered to community representatives. Socio-demographic data was gathered from interview participants and is presented in the first section. The following five sections provide details about the comments made during each part of the interview, reflecting the main interview topics: availability of French resources and services, accessibility and barriers preventing access to these resources, the quality of these resources, the community profile, and the challenges faced by the community with respect to services and resources targeting early childhood. The chapter ends with a discussion of the results and the limitations of the survey.

6.1 DESCRIPTION OF THE COMMUNITY REPRESENTATIVE SAMPLE

The representatives from participating communities were chosen for their knowledge of or expertise in the targeted francophone sectors—early childhood, child care services, family services, and education. To select participants, we appealed to local networks, community coordinators, and champion councils, as well as various project stakeholders. Their participation was voluntary and unpaid.

In total, 23 interviews were conducted with three to six participants per community, from December 11, 2007 to February 1, 2008. Of this number, 21 respondents held a paid position in an organization and two did volunteer work. There were 18 women and 5 men. Most of the respondents had been working in their position for less than three years (answers varied from less than a year to thirteen years).

Table 6.1 provides a description of the total sample by community and by the represented field (health, education, child care setting, etc.).⁴³

Table 6.1: Participants by community and by field

Community	Child care services	Education	Family services	Health	Multiple services
Cornwall	1	1		1	
Durham	2	1			1
Edmonton	2	2	2		
Edmundston		1	2		
Orleans	2		1		
Saint John		1		1	2

⁴³ Family services include services aimed at children and their family, such as play groups, language development programs, literacy workshops, etc. Multiple services include organizations that offer several different services (e.g. district health boards, family activities, etc.).

6.2 AVAILABILITY OF FRENCH RESOURCES AND SERVICES

This section presents participants' answers to the first interview question: When you think of this community and the way in which it supports child development in francophone preschoolers, which key services and organizations come to mind? The interview was designed to seek participants' opinions on: literacy and cultural resources; sports and recreational activities; early childhood care and family resource centres; schools, school and public libraries, and community centres; religious organizations and spiritual development; and finally, health services. It should be noted that quotes have been presented verbatim. No changes have been made to correct the English.

6.2.1 Literacy and cultural resources

"But in French, there really isn't a problem. The problem we might have, I think you asked me about culture, well I'd say it's movies. You go to the show and the movies are all in English, except for one week per year when they play French movies. That's the part I find unfortunate. But for libraries, hey, no problem there—we have French story time."

"It's because they don't make any money... there used to be cultural programming. If I wanted to learn pottery, I just had to sign up, they offered it every year, and now they don't anymore. There is less focus on those services, on the pretext that they used to be offered and not enough people were participating. But that was 10-15 years ago, and now there's a bigger population. And there's no good reason to simply say, "Oh, we tried that in the past". That's just an excuse, as far as I'm concerned."

For questions related to **literacy**, answers spanned from "adult literacy" and "adult training" to activities designed to develop reading and writing skills in young children. In all communities, public libraries seem to offer children and their parents the possibility of participating in reading circles and literacy activities to varying degrees. Not surprisingly, communities with a large francophone community centre offer a wide variety of family literacy activities and resources to their residents. Likewise, in communities with a greater francophone presence, programs promoting family literacy are in place. These programs provide guidance and resources that can be taken home. However, communities located at a distance from large francophone centres seem to lack resources in French, whether to purchase or borrow.

Two thirds of the sample members mentioned a lack of **cultural activities**⁴⁴ catering to early childhood. Most cultural activities that appear successful in reaching young parents are organized by school boards and are offered in schools. When asked to give examples of cultural events, many respondents mentioned performances and family or community activities that could also fall into the leisure activity category, such as the sugar shack, winter carnival and Santa Claus' visit. This may be explained by a lack of knowledge as to what constitutes a cultural activity or the fact that, at times, cultural activities and leisure activities may overlap. For example, painting and dancing courses are cultural activities, but can also be considered leisure activities.

⁴⁴ Cultural activities identified by participants included: entertainment, singing contests, painting, dancing and music courses, workshops for young parents and activities organized by public libraries, etc.

Only a few respondents mentioned an active francophone cultural program that includes jazz concerts or adult plays. These types of events are not addressed to preschoolers, but may serve as a good indicator of the vitality of the francophone culture in the community. In addition, it would appear that the lack of services offered to young francophone families is compounded by a limited participation in available activities. Reasons given for low participation in francophone activities varied from being unaware of the services, resources or activities offered by the community, to the hypothesis that some young couples would not define themselves as Francophones and would therefore not register in activities targeting Francophones.

6.2.2 Sports and leisure activities

“I would say ‘no’. There are a lot of sports activities further away available for families in the region, but I can’t really say that I’ve seen... people are bilingual, but most of them speak English.

“We have few activities, uh, outside of the home that allow us to practice French and live in French, so what you get are children who, uh, hear their mommy and daddy speaking French, they learn French at school ... so then French becomes the language they learn at school and spoken by mommy and daddy, but it’s not the language that they identify with ..”

In most communities, respondents reported that a wide variety of sports and leisure activities⁴⁵ are available; however, services are often bilingual or in English and are not provided exclusively in French. Only one of the participating communities mentioned the existence of a francophone sports association, although the programs offered by this association are limited to a certain number of activities and specific age groups. However, throughout the school year and even during some francophone summer camps, children have access to a wide range of sports. Outside of school, various organizations, such as Scouts, Girl Guides, Knights of Columbus, Optimist Club, Daughters of Isabella, hockey associations and community centres offer sports and leisure activities in French to different age groups. On the other hand, choices are more limited for activities targeting early childhood; activities are usually offered in English or, at best, in both official languages. Also, in the communities being studied, French services are rarely provided on a regular basis. When they are available, they must be requested, then the person must be prepared to place his/her name on a waiting list in the hopes that enough requests will be made for the services to be provided in French. As noted by participants, most parents agree to take part in English or bilingual activities because it is more convenient to do so.

6.2.3 Early childhood care and family resource centres

“And there are also play groups, uh, there are different play groups that are informal get togethers for parents and children, who meet as needed, so, uh, these play groups, well, they’re groups that aren’t necessarily organized.

“They did not name it a 5 to 7. They have named it I think a family gathering, which was organized three weeks ago, a Friday night, from 5 pm to 7 pm, it gave parents with young children a chance to chat, listen to music, etc. There were activities for

⁴⁵ The sports and leisure group includes basketball, Scouts, summer camps, hockey, Girl Guides, swimming lessons, soccer, dance lessons, gymnastics, skating, etc.

kids of all ages, like crafts and things like that, so it gives the community a chance to get together.”

All of the individuals interviewed mentioned a variety of organizations, associations or groups that provide different early childhood services and alternative activities for families. In most cases, respondents indicated that community centres, schools or community programs are the main organizations offering French child care services. Many civic associations, such as women or parent associations set up and run by volunteers, were mentioned as good sources of information and services for family and early childhood resources. Socializing, through an activity or service offered by different organizations is considered to be an important family resource. Some community programs provide a weekly meeting venue for parents, grandparents and children. Children have an opportunity to socialize in French while playing with other children and spending time with their grandparents. As for the parents, they have an opportunity to socialize and interact with other francophone parents.

Play groups organized by parents are seen as effective means of socializing and exchanging information for interested parents. During these meetings, coordinators or participating parents choose topics of interest to francophone parents and pass on information to the other participants. Most established centres are largely subsidized and are therefore able to provide services on a more regular basis, along with a wider variety of resources. Thus, it was mentioned in several communities that the family centre would lend out French documents that could be taken home, in addition to offering courses and workshops on parenting. In one of these communities, parents with young children are given a bag of books and videocassettes along with a list of community resources available in French. One of the respondents even spoke of an initiative that involves “satellite centres” providing resources and regular services to francophone families in remote areas.

6.2.4 Schools, libraries and community centres

“... And I’d say it’s a bit like school is kind of like a pillar, you know, it’s there where families see each other, get together and, um, there’s a real effort, it’s a lot more multicultural now than it used to be, when it was just Francophones.”

“... libraries too, libraries, uh, are really, the staff is French and they would like to have French customers so they need to do some marketing here and there, the services are available and well known, though there is room for improvement.”

“The community centre is also accessible to all youth, to all children. There are some activities that are specifically for children, there are activities related to Halloween, Christmas, things like that, but it’s a limited service.”

Schools are by far the most available francophone resource. Apart from the lack of child care services before and after school, the francophone school system appears to offer a very satisfactory service to participating communities. School boards play an important role in promoting French services and provide complementary services, such as managing book sales or facilitating workshops on family literacy or parenting skills.

With respect to the availability of community libraries, opinions are divided, even within a given community. Some think that French books and resources are widely available, while others think that they are limited. School libraries are often perceived as being well equipped. However,

families with preschoolers are poorly served in these communities since they do not have access to the services and resources available at school libraries. Only a small number of communities have a local library offering programs specifically targeting preschoolers.

Nearly all of the communities count on centres that provide several French resources and services. However, as one respondent pointed out, the centres are limited to initiatives or activities for which they have the necessary funding to pay for the costs of the facilities. Consequently, a certain number of community initiatives are not offered because there are insufficient funds to pay for rooms to host them. Therefore, community centres financed by the provinces offer programs more regularly, such as Ontario daycare centres.

6.2.5 Religious organizations and spiritual development

“Definitely, um, when I attend mass in English, I don’t feel at home, but when I attend mass in French, I feel like I’m at home. When I took my kids to a French church, they felt at home too, and it developed too, through singing, reading, listening to others, being part of the community, that definitely helped them to become more socially francophone.”

Most respondents are very familiar with French Catholic services. Catholicism is clearly predominant in all participating sites, with only a few other religious denominations mentioned. Depending on the degree to which participants practice religion, they are more or less familiar with their local church’s services and schedules. Religion is qualified as “very present” in at least one of the communities being studied. Although it is recognized that preschoolers are often left out of most spiritual and religious practices, the Church affords them the opportunity to take part in a common activity that attracts the francophone community, making their participation very important. It is interesting to note that the church still serves as an important meeting place for Francophones. In fact, some respondents commented that certain people who drive the distance to church would not necessarily travel 30 minutes to take part in any other activity.

According to the answers given, we can see that churches attract groups of people for different fundraising activities and support various activities that foster the community’s well-being. Religious activities, from mass to activities organized and coordinated by the church seem to provide opportunities for francophone families to socialize for free.

6.2.6 Francophone daycares

“And there are a lot of, um, homes, uh, private homes where child care services are provided in French. I couldn’t give you the exact figures, since it changes from one month to the next, but ... there must be at least twenty or so that we are aware of because they aren’t regulated, and they aren’t organized per se. There are moms who decide who decide to stay at home with their children, and they take in other children ...”

“I can tell you that I met someone who worked at the daycare and she was really surprised. That was back in September, and she was totally surprised to find that we had a daycare ... for francophone children. We’ve had one since 85, yeah... or, uh, I should say, since the 90s, I’m not sure what year the daycare opened, but it’s been around for several years now.”

Respondents mentioned that French daycare centres in minority communities are a rare commodity. In two of the participating communities, there is only one francophone daycare, located in a community centre. Parents are often unaware that a French daycare even exists in their community.

Some respondents explained that there is an abundance of non-regulated home daycare centres that provide informal child care services though it is difficult to quantify them or estimate the number of children in their care. These “home” child care services are much more affordable and, in some cases, are perceived as more trustworthy than daycare centres located in community facilities. In a few participating communities, one organization controls and regulates all child care services, including those provided in informal daycare centres and in formal community daycare centres, as well as immersion services before and after school. In communities where child care services are more clearly defined, there is a belief that services are of very good quality. The majority of respondents consider daycare centres to be a means of catalyzing a child’s acquisition of French language skills before entering the school system. Some communities reported that daycare centres are the only means of promoting French in children.

At all sites except for one, daycare centres have a permanent waiting list. Despite the subsidized spots, the cost of child care services is still a problem for low income families. It is important to note that in two of the communities, respondents were unanimous with regards to the high quality of French child care services.

6.2.7 Health

“Health care these days is pretty much where education was about 15-20 years ago. It’s not in the Charter of Rights, it’s not recognized in the provincial health law, sorry, so the people who are, uh, the pioneers in that field need to work hard to try and get things. So, naturally, the opening of community health centre X is a big deal for the francophone community.”

“I don’t even know if there is a francophone dentist here. I know that at the dentist where I go, there’s a dental hygienist who can help out the dentist if he needs an explanation. But when it comes to health care professionals, they are limited, that’s for sure, um, or we have to wait if we want to be served in French.”

“Well, that’s the biggest challenge we have, because we don’t really have any to speak of. There are some (services), but we have to travel far to get them. I had one mother last year who was looking for a psychologist for her son, who was only five. And I had another, a mother looking for a French pediatrician, because she didn’t speak a word of English.”

In general, respondents indicated that their community provides general health services in French. However, all respondents, except for one, reported a lack of specialized health care services in French in their community. Even where the school system provides health care services a few days per week, it becomes difficult for parents of a child with a specialised health care problem to find a professional who speaks French. Some communities are beginning to set up a French health care service centre. Though the infrastructure is in place, it is still difficult to find French health care professionals to provide the services.

6.3 ACCESSIBILITY AND BARRIERS TO FRENCH LANGUAGE RESOURCES AND SERVICES

Community representatives were asked to answer the following question: In your experience, how do families learn about French services or resources available in your community? The problem of accessing a service can be seen in two stages: becoming aware that such a service exists and then accessing it. Obviously, in order to have access to French services, people must first become aware that they exist. However, even after one is aware of a service, access may be restricted by certain barriers encountered by young families, especially those belonging to sub-groups, such as low income families, single-parent families, exogamous families, and families who have just moved into the community. Answers given by community representatives were combined with those given by parents during the follow-up survey administered in February 2008. The parents expressed their opinions on how difficult they felt it was to obtain services and provided reasons that might explain why access to these services was difficult. The perception held by community representatives was thereby validated by the opinion of the parents, who are the recipients of the services.

6.3.1 Awareness

“For me, it was a stroke of luck, through word of mouth, um, it was through knocking on doors (laughs) and asking around, it was really by luck that I happened to discover the resources that existed.”

“That’s it, they need to advertise in schools; people don’t usually notice ads in the newspaper, they’re not usually checking the paper for those.”

“O.K. I think that the best source is word of mouth. Then, of course, you have flyers. Using schools is always a good idea. Um, there are also newspapers, but newspapers have an additional challenge, we only have a weekly newspaper, and then there’s the community radio station, which, in my opinion, isn’t used enough. I think that’s a shame, but it’s still a good source of... a source of information.”

Below are the main ways that people learn that services exist:

- The majority of respondents mentioned word of mouth as the most common and effective means by which francophone families become aware of services available in French. The representatives’ description of this form of networking or word of mouth resembles a sub-culture coexisting alongside the dominant anglophone culture.
- Meeting places or “sources of information” may be public places, like parks or anglophone community centres. They may also be gatherings organized within the framework of other francophone activities, such as mass.
- Web sites are also an effective means of establishing contact with potential francophone users.
- Finally, having offices in a high traffic area (for example, on a main road) increases the visibility of an organization and helps attract Francophones, individually or as a family. When a French activity, site or service is of interest to families, it creates a “snowball” effect, since many activities and services are announced at the same location. For example, families who arrive at a site where an activity is taking place

will have an opportunity to learn about other activities, Web sites, phone numbers, contacts and services. This information will also spark their interest and will lead them to participate in more activities and use more services.

6.3.2 Barriers

“I don’t know if they have as much trouble with access as I observed; I’d say it’s more of an identity problem.”

“The hardest thing is to find families who are not necessarily part of a francophone network, uh, for certain families, the key may lie in French health services.”

“Do we have barriers? That makes me laugh...how can we have barriers when we barely have any services? They are very minimal. I’m talking very minimal across the board. But to answer your question, no, I think that the services that do exist are easily accessible.”

“During the week, parents work during the day, they can’t take time off to participate in activities, and then, at night, the problem is that they have to pay for a babysitter, o.k., so, then it’s time for the evening shift, time to help the kids in school with their homework. And then you have all the single-parent families, there are a lot of separations, so I think it’s tough.”

“It’s a problem, yes, logically because we aren’t a designated city, so we don’t have the services we need.”

Community representatives: According to community representatives, ignorance of French resources, services and Francophone rights is at the heart of barriers to access. Given the answers obtained, two different perspectives help explain these barriers, one blaming those receiving the services and one blaming those providing the services.

The representatives said that they are concerned with the cultural identity of some families who feel compelled to opt for a “bilingual” identity, and therefore stop looking for or stop participating in activities offered in French only. Respondents also mentioned that potential users are perceived as being “simply not interested”. Thus, exogamous families are particularly difficult to reach and keep informed or interested, because they are probably targeted by bilingual communications, which goes against the mandate of francophone centres.

It was pointed out that an organization’s lack of financial resources—an element that is not directly related to potential users—was not the reason for the lack of services. Rather, such deficiencies resulted in a limited variety of services or a failure to offer extended hours.

Among the specific barriers faced by vulnerable families, distance is the greatest problem. Not having a practical means of transportation or dealing with the complete lack of public transit system (in one community) are other major barriers. Some francophone families in a minority situation live a fair distance from what is considered a “physical” francophone resource centre, which constitutes a significant barrier for those who lack the means to have an automobile. It is worth noting that two centres have “bookmobiles” or “toy libraries” that make regular rounds to certain remote areas; however, this is not the case in all communities.

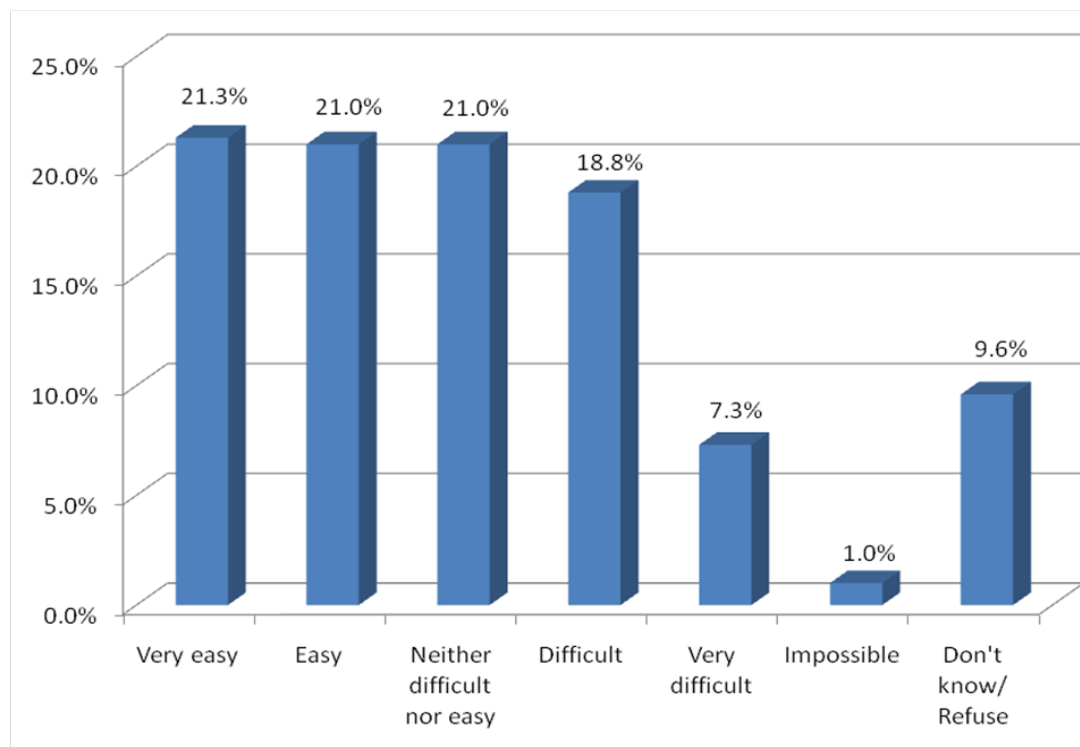
Low income families, particularly single-parent families, young mothers and recent immigrants, are faced with other barriers. In addition to the foreseeable challenges related to the

cost of resources, services or means of transportation, a certain degree of isolation prevents them from being informed of alternatives or potential solutions.

Parents: Parents were asked their opinion on the level of difficulty they experienced in accessing French services, to determine their perception as recipients of these services.

Total sample: In total, 27% of parents reported that access to French services ranged from difficult to impossible, 21% were indifferent (neither difficult nor easy), while 42% of parents reported that access to services was easy to very easy. It must be noted that 10% of respondents did not provide an answer or opinion (see Figure 6.1).

Figure 6.1: Level of difficulty in accessing French services



Additional analyses: No difference was noted in the level of difficulty perceived by the parents in relation to the language in which the survey was completed [$F(1, 282) = 2.75, p > 0.05$]. Comparative analyses between communities illustrated significant differences [$F(5, 278) = 59.25, p = 0.000$]. It should be noted that the scores presented in Table 6.2 are to be interpreted using a 6-point Likert scale: (1) *Very easy*; (3) *Neither difficult nor easy*; (4) *Difficult*; and (6) *Impossible*. It follows that the higher the score, the greater the difficulty in accessing French services. The results of post-hoc analyses (Tukey HSD) indicate that participants in the communities of:

- Durham, Saint John and Edmonton reported greater difficulty in accessing French services compared to participants in the other three communities;
- Orleans and Cornwall, in turn, reported relatively greater difficulty in accessing French services than participants living in Edmundston.

Table 6.2: Analysis of variance (ANOVA) of the level of difficulty in accessing French services, by community

<i>Difficulty in accessing services</i> <i>Communities</i>	<i>Mean score (standard deviation)</i> <i>n</i>	<i>Percentage of Francophones in the community</i>	<i>Significant differences between communities?</i> <i>Post-hoc (Tukey HSD)</i>
Edmundston	1.37 (0.64) n = 83	91%	Yes Durham, Saint John and Edmonton** < the other three communities Cornwall and Orleans** < Edmundston
Orleans	2.69 (0.99) n = 54	30%	
Cornwall	2.98 (0.87) n = 58	30.5%	
Saint John	3.74 (1.20) n = 27	5%	
Edmonton	3.63 (1.11) n = 35	2.7%	
Durham	3.93 (1.04) n = 27	2.8%	

Note: Significance level: *** $\leq 1\%$; ** $\leq 5\%$.

It is interesting to note that the scores for the perception of the difficulty in accessing French services is considerably reflective of the percentage of Francophones living in these communities (Statistics Canada, 2006b). Therefore, participants in the communities of Durham, Edmonton and Saint John, which have a very small minority of Francophones, reported having far greater difficulty in accessing services compared to participants in the communities of Cornwall and Orleans, which have a moderate number of minority Francophones. Conversely, participants in the community of Edmundston, which is characterized by its francophone majority, reported an ease of access for services in French.

Experimental groups: Significant differences were noted between experimental groups in analyses of the level of difficulty in accessing French services [$F(2, 281) = 4.47, p = 0.012$]. The results of post-hoc analyses (Tukey HSD) shown in Table 6.3 reveal that the program group has more difficulty accessing French services compared to the two comparison groups.

Table 6.3: Analysis of variance (ANOVA) of the level of difficulty in accessing French services, by experimental group

<i>Difficulty in accessing services</i> <i>Experimental group</i>	<i>Mean score (standard deviation)</i> <i>n</i>	<i>Significant differences between groups?</i> <i>Post-hoc (Tukey HSD)</i>
Program group	3.02 (1.40) n = 95	G1*** < G2, G3
Formal daycare comparison group	2.54 (1.17) n = 99	
Informal daycare comparison group	2.53 (1.31) n = 90	

Note: Significance level: *** $\leq 1\%$; ** $\leq 5\%$.

Reasons for the difficulty in accessing services: Some respondents identified the underlying reasons for the difficulty in accessing French services, using a pre-established list.

- The large majority of participants (n = 220; 71.9%) did not identify a reason, which more or less corresponds to the number of respondents who reported that access to French services was neither difficult nor easy, or easy to very easy (63.3%).
- Among the respondents who identified reasons (n = 86; 28.1%), the greatest difficulty stems from the lack of francophone professionals (n = 55; 18.0%), followed by a complete lack of services (n = 30; 9.8%) and a lack of awareness that the services are provided (n = 28; 9.2%). Distance and transportation problems (n = 18; 5.9%) appear to be less of a barrier to accessing services.
- Respondents who identified reasons also cited communication problems (n = 12; 3.9%) and long waiting periods (n = 10; 3.3%) as minor reasons.
- Some parents (n = 17; 5.6%) added comments, highlighting a few other concerns, such as: scarcity or lack of services and resources available in French (n = 10); poor marketing of available services and resources (n = 3); inconvenient business hours (n = 2); and a lack of demand due to the small francophone population in the community (n = 3).

Respondents could choose more than one reason from the pre-established list to explain the difficulties in accessing services. Of those who took advantage of the list (n = 86), slightly less than half identified one reason to explain the difficulties in accessing French services (n = 35; 41%), a third of the respondents chose two reasons (n = 29; 34%) and a quarter chose three or more reasons (n = 22; 25%). The link between the number of reasons used to explain the difficulties in accessing French services and the community of origin was then examined. Of the respondents who gave more than one reason, 63% are from Edmonton, 50% live in Saint John or Durham, 23% live in Cornwall and 22% are from Orleans. Moreover, none of the parents in Edmundston identified more than one underlying reason for accessibility problems and only 2% identified a single reason. In fact, we observed a correlation of 0.71 between the level of difficulty in accessing services and the number of reasons reported.

6.4 QUALITY OF FRENCH SERVICES AVAILABLE TO SUPPORT THE DEVELOPMENT OF FRANCOPHONE PRESCHOOLERS

Community representatives were asked to answer the following question: Now, I would like you to rate on a scale of 1 to 5 — 1 meaning very poor and 5 meaning very good — the way that families would judge the quality of services available in French to support child development in francophone preschoolers in the area. Unfortunately, the question was misunderstood by many respondents. One of them refused to answer because he felt that the word “quality” did not apply and that such a rating was not relevant.

With the exception of the high rating given to schools, answers on the quality of services and their rating on a scale of 1 to 5 were contradictory or often missing. Also, within a given community, it was impossible to generalize representatives’ answers due to such contradictions. For example, one respondent proposed a rating for the use of cultural activities and services and a completely different rating for the quality of the same services; the variance was high, with a

mean score of 2 out of 5 for the use of activities and services and a mean score of 4 out of 5 for the quality of services. The explanation provided for the variance between the scores for the use of services and the quality of services was interesting. Although cultural activities and services offered are of high quality, families are being excluded or have to give up activities due to hours that are not appropriate for young children. In all but two cases, literacy services were rated low or not rated at all. With the exception of one community close to a large bilingual centre, all of the communities gave a low rating (between 1 and 3) for the quality of sports and leisure activities.

6.5 COMMUNITY PROFILE

Attention then turned to the stability of the francophone population, feelings of security, multicultural diversity, the presence of community tensions, and the socio-economic status of community residents. The question asked was: *How would you (briefly) describe this community and the people who live here?*

The vast majority of people interviewed had not been members of their community for very many years. It is therefore not surprising that, with the exception of two people, respondents had little knowledge of the history of francophone presence in their community. In several cases, respondents indicated that Francophones had “always” been present in the region, then indicated that this presence dated back 10 or 15 years. Communities participating in the Readiness to Learn project have a very different profile, but with the exception of one, community representatives reported that the expansion of the francophone community was relatively recent. According to the interviews:

- We can see that there has always been a francophone presence coexisting discreetly or passively with an anglophone majority. Francophone presence in most communities goes back quite a ways, but the respondent sample did not seem to be aware of the change that had taken place over time. Only two respondents were quite knowledgeable about the history of the francophone presence and the factors contributing to change. The most frequently cited factors of change were legislation and economic growth.
- Perceptions of security in the community are very positive, based on comparisons with large urban centres where, obviously, security is of greater concern. Respondents clearly explained their lifestyle and their tendency to move into family-oriented or affluent areas, with lower delinquency rates.
- The growing presence of new cultural groups was clearly indicated by several participants. In some communities, we saw a relatively recent wave of new francophone immigrants who brought a strong presence into their school system. Other communities reported having cultural diversity, but not necessarily in the francophone community.
- The presence of new groups seeking a niche in the growing economy of certain communities is perceived by a few respondents as a source of tension which does not appear to be too serious, but is nonetheless present and contributes to community modelling. Cultural differences in some new groups are often too considerable for

individuals to easily blend with existing francophone groups. However, it should be noted that other forms of tension are far more recurring, particularly the perceived tensions between Anglophones and Francophones, and between Francophones outside of Quebec and Franco-Canadians in Quebec.

- The relative majority of respondents reported that their community was not experiencing major economic problems and that people were moving into the community for employment. Only two communities seemed to show signs of economic problems, citing recent departures by major employers in their region as principal reasons. Unemployment, new immigrants and a high rate of young single mothers (in one community) were some of the most common sources of economic weakness mentioned.

6.6 CURRENT COMMUNITY CHALLENGES IN TERMS OF MISSING COMMUNITY SERVICES OR ACTIVITIES AND UNDERDEVELOPED RESOURCES

“We know perfectly well that in a bilingual organization, services are not offered in French. They’ll always be offered in English first.”

“People complain when there’s nothing, but when there is something, they don’t go.”

“O.K., first of all, I would say that there is a lack not just of educators to work in regulated daycare centres. There is also a lack of health care professionals, be it speech therapists, occupational therapists, doctors, pediatricians.”

“I think that, given current circumstances, one of the greatest challenges we are now facing is the fact that there are more and more exogamous families. Whether they are exogamous, francophone-anglophone or francophone something else, um, this is one, this is one of the greatest challenges faced by community organizations and it’s part of the problem that they have in attracting individuals and families.”

Survey participants answered the following question: Which types of community services or activities would parents of francophone preschoolers like to have the most that cannot be found in this community? This question specifically addresses the current challenges faced by the community in terms of absent or underdeveloped services, activities or resources for the community as a whole or for early childhood, specifically.

Interviews with community representatives revealed different challenges, however very few were specific to a single community. Other than the obvious challenge of living in a francophone minority community where most activities and daily communications take place in English, the following challenges were mentioned:

- The decline or sprawl of Francophones in the region;
- The prevailing trend to offer more and more bilingual services to francophone families;
- The lack of francophone professionals in the school and health systems;
- The lack of French daycare centres and alternatives;

- The increase in exogamous couples;
- Low attendance and low participation levels at francophone events (it must be noted that none of the respondents stated that participation levels were higher when activities were free);
- The lack of volunteers.

When we asked respondents to comment on underdeveloped resources for early childhood and missing services, they identified many areas, such as (in order of frequency):

1. Entertainment, activities and cultural events: with the exception of one community, there is a lack of activities of this nature for young families. Costs and/or timing prevent families with young children from participating.
2. Daycare centres and alternative services: daycare centres often have long waiting lists and are only open during regular working hours, lacking consideration for parents who work evening and midnight shifts. There is also a need for a service that regulates informal daycares and connects them with parents seeking such services.
3. There is a gap or grey area regarding services offered to mothers and parents from the time a child is born until the child reaches age three or four and is accepted into different services designed for early childhood. One respondent mentioned that it was important to set up a “parent relief centre” to support mothers and newcomers to the community.
4. Play groups are under-represented, though they are a good way for parents of young children to access other francophone services and to ensure that their children begin interacting in a francophone environment at a young age.
5. Not all communities have a community centre and some have a form of community centre in theory, but not in practice. According to a few respondents, the ideal situation would be to establish a one-stop family resource centre offering a wide range of services that meet the needs of families with young children (e.g., health, leisure, special care, play groups, library, etc.).
6. The role of volunteers should not be underestimated. We can see by the interview responses that their role is important in ensuring the continuity and quality of certain activities and services for Francophones. These volunteers are not always perceived as such, but their role is seen as essential in shaping the community and creating cohesion within it. One can think of a group of women, for example, who organize a carpooling and snack service for a play group led and facilitated by parents.

In closing, it should be mentioned that situations which could be classified as at-risk or as signs of assimilation, were frequently raised by respondents.

“We go shopping, and it’s in English, television programs, it’s more difficult, they are less popular with young children than... Maybe when I was young, my parents spoke French so we watched everything on television in French. If my husband watches television in English, well, we all watch television in English. It’s a bit difficult, it’s not just because my husband speaks English, it’s just the American culture.”

“I think that people don’t stand their ground enough when it comes to French, they don’t care enough about their language. But then again, from a social point of view, you can’t blame them. The children are truly assimilated because if they want to go to a dance, if they want to do that, everything is in English... ”

“But I find that it limits a child in his/her learning English, I don’t know how much, um, but I think it’s too bad, and, well, it’s just the francophone reality. For instance, at Daycare XYZ, they say that everything has to be in French, but is there some way to integrate a few English elements? Maybe, Ok. Are there some activities that could be done in English at times, and I know that when the parents’ survey was done, some of the parents asked if it would be possible to incorporate a few English activities into the program.”

Respondents gave examples of families where people had given up their rights as Francophones to gain access to a wider range of services or to honour a “cultural fusion” with a non-francophone partner. Other families have developed a false impression that being bilingual gives them a higher or better linguistic status, so they identify themselves as such rather than as francophone; in doing this, they are gradually contributing to the deterioration or the loss of francophone services in their community.

6.7 DISCUSSION

Although the communities are very different from one another, they nevertheless share common characteristics and challenges. This section begins by presenting three findings based on community representative interviews. It continues with result limitations and ends with the anticipated steps for future impact analyses.

Findings

The first finding based on the interviews is that early childhood services are available in English or both languages, but never only in French. It seems, therefore, that there are few services or resources that target francophone early childhood. According to community representatives, there is a general lack of health services. This situation is even worse when it comes to services provided in French. In fact, two respondents indicated that they had to wait a long time to be served by a Francophone which explains why families opt for services in English. When questioned on the presence of French resources and services, in several cases, respondents mentioned resources and services for older children rather than those geared toward early childhood.

In terms of barriers to accessing services, representatives’ answers were similar to those given by the parents. The top-ranking barrier was a lack of awareness or an absence of services available in French, closely followed by a lack of qualified francophone professionals. However, most parents said that they generally did not have a problem getting served—regardless of the language. The parents implied that they turn to English services when they experience difficulty finding community services in French. Representatives said that distance is a problem in accessing community resources. Families who live in more remote areas participate a lot less in activities within the francophone community; they may also be unaware of the resources available to them.

The second finding was the concern expressed by some community representatives that francophone parents are assimilating into the anglophone environment. It was observed that parents are more often English-oriented, since it is much easier to access community resources, or because one of the members of the couple is an anglophone. Families who turn more toward English are isolating themselves from other Francophones, making it difficult to organize the community.

The third finding relates to community profiles. Respondents reported a significant number of new Francophones who had just arrived in their community. The economic situation in some areas has forced families to move to new locations offering better job opportunities. Some of them decide to make a permanent move, while others stay for a short period with the intention to return to their city or country of origin. Clearly, individuals who consider their community to be their home will invest in the community's well-being over the long term. The degree of stability in the communities may also explain differences in the availability of resources for families and early childhood.

Previous studies have shown that neighbourhoods with a high level of stability have residents who are more likely to act on behalf of their children's needs. High levels of residential mobility and neighbourhood relocation often correspond to social upheaval and weakening of social links, which may foster a climate that promotes crime and other antisocial behaviours. Consequently, social links are an important prerequisite for a neighbourhood's cohesion and collective efficiency—in other words, social cohesion between neighbours and their willingness to take action for the common good (Sampson, Raudenbush and Earls, 1997). Family mobility may be one of the reasons why, on a scale measuring social capital (see Chapter 3), only 65% of the persons most knowledgeable (PMKs) about the children were able to answer all of the questions.

Result limitations

It is clear that a majority of respondents have very little knowledge of their community's history. Only 2 respondents out of 23 were able to answer the question about their community's history. It is therefore not surprising that the information obtained in certain sections of the survey was not very complete. A second limitation concerns to the administration of interviews to people who generally work for organizations providing French services. The bias in their answers was clear when they were asked to assess the quality of community resources and services. It was not surprising to find that the majority of representatives found it very difficult to assign a quality rating to services offered in French; some even refused to answer, saying that they found the questions out of context or not applicable. Finally, it is worth mentioning that the opinions expressed were from a limited number of community representatives. They do not necessarily reflect the viewpoints of the communities, employers or organizations where the community survey participants are employed. Moreover, the interview was designed in English and all subsequent revisions were made to the English version of the document. Translation problems or cultural biases might have been harmful since all of the interviews were conducted in French. To give just a few examples, some of the questions contained elements that are traditionally found in anglophone communities but not necessarily found in francophone communities (e.g., Sunday schools). The section on access to services did not include questions on barriers that might be specific to Francophones living in a minority environment (e.g., degree of accommodation by the dominant cultural group; provincial funding policies; child care centres' accreditation policies, etc.).

Future analyses

The results of the community surveys will be combined with other sources of community information (e.g., community mapping, parents' surveys) so that they contribute to a greater understanding of the community dynamic. However, the community survey provides information on the community's general trends, but not on the details specific to those who use the community services and resources. This makes it difficult to use the data in impact analyses. Community factors were measured more precisely in the parents' follow-up surveys. Thus, we were able to gather information directly from parents on the types of services and resources that target young families and how often they were used. The same applied for details on the language in which services and resources were provided, and for access barriers from the users' perspective. Finally, we obtained more precise information on parent's perception of the francophone vitality of their community. Analyses performed in previous studies primarily used contextual variables and family processes, along with parents' perception of community variables to explain child development (these variables are examined in Chapter 1). (See also G. Doherty, 2007 and E. M. Thomas, 2006.)

7.0 Community mapping

This chapter presents the community mapping results for each of the six communities in the study. The primary aim of this community mapping is to link the location of French-language resources with the location of the francophone population in each community. It also aims to analyse the cultural capital profile (Landry, 1994) specific to the organizations and institutions that target early childhood in a francophone minority context.

The chapter begins with an overview of the community mapping projects undertaken in the area of early childhood. The second section presents the methodology used to create the maps, particularly the development of the taxonomy of the indexed resources, the delimitation of each community, the choice of standard geographic unit for subdividing them and the creation of a language “layer”.

The subsequent sections present a brief socio-demographic profile for each community and an inventory of the resources and programs with a discussion of where Francophones are located in relation to these resources. The chapter ends by looking back at the key findings from the analysis of each community’s mapping based on the level of cultural capital and the completeness of institutional infrastructures targeting early childhood. The limitations of the current analyses and plans for future analyses will also be discussed.

7.1 INTRODUCTION TO COMMUNITY MAPPING

Community mapping is a tool that provides a visual overview of the links between a neighbourhood’s physical and socio-economic features and the location of at least one variable of interest. These variables of interest are linked to geographic identifiers (for example, a postal code, longitude and latitude coordinates) which enable them to be located within the community.

Mapping consists of a number of superimposed “layers” of information. The first layer consists of the geographic region being studied, such as a census division. A second layer can be subdivide or “carve” the region into smaller geographic units, dissemination areas for example. The layers are then superimposed with data for the variable(s) of interest such as, the percentage of low-income households or the crime rate. These maps therefore highlight how the variable(s) of interest are distributed across each of the geographic areas under consideration.

Examples of community mapping

Community mapping was used successfully in *Understanding the Early Years* (UEY), a research initiative of Human Resources and Skills Development Canada (HRSDC). Beginning in 1999 and promoting a better understanding of the factors that may influence childhood development, the UEY project sought to produce research results at the community level to encourage decision-making based on empirical evidence in each of the communities taking part in the study. To do this the UEY project model relied on forging partnerships with numerous federal government agencies responsible for producing empirical data using the *Early*

Development Instrument (EDI), as well as with firmly rooted non-government agencies responsible for disseminating the results at the community level (HRSDC, n. d.).

An analysis of the community mapping results confirmed the existence of major disparities in terms of school readiness among children from certain neighbourhoods and identified schools that systematically serve children who are less ready for school. Using a risk index created from risk factors recognized in the field (e.g., single-parent families), additional results identified neighbourhoods that were particularly vulnerable, even though they were well served by programs and services targeting early childhood.

Community mapping has become a key tool for service and resource providers because it provides essential information within the context of planning and delivering community services and resources, thereby enabling them to meet the needs of young children and their families more effectively.

7.2 METHODOLOGY

This section describes the steps in developing an inventory of early childhood services and resources and creating maps.

Taxonomy of the indexed resources

The taxonomy of the resource categories and sub-categories takes many of the categories identified in the *Understanding the Early Years* study (Connor and Brink, 1999) and *Le meilleur est... avenir!* report prepared by the Commission nationale des parents francophones (CNPf, 2005). Together, these two studies served as a source of inspiration for the taxonomy of the resources deemed important for the development of young children living in a francophone minority context. Given the objectives of the Readiness to Learn project, the inventory created within the framework of community mapping is more concerned with the resources directly associated with educational resources and school readiness. Thus, for inclusion in the inventory, a resource had to meet the following criteria:

- Be directly available to children aged 0 to 6 years and/or their parent(s);
- Be available at a site physically located in the community (*examples of exclusions:* committees or advocacy work, Web site);
- Be available in French, according to one of the following three categories: French at all times, French and English, or French on demand only.

Also, some resources deemed to be less relevant for the Readiness to Learn project objectives were not indexed, including:

- Health-related services or programs other than French-language hospitals and health centres;
- Programs or interventions to identify and/or support children with special needs;
- Religious institutions.
- Note that the family literacy services delivered under the Readiness to Learn in Minority Francophone Communities project were not considered because they are not

permanent resources, but rather resources linked to a research project taking place in a defined time frame.

Readers are also asked to note that only school daycares and formal daycares were included in the inventory. Furthermore, the objective was to create an inventory of resources and programs, so services were not evaluated in any way, either in terms of quality or access, nor were cost-benefit analyses conducted. Table 7.1 presents the taxonomy of the categories and sub-categories of resources indexed.

Table 7.1: Categories and sub-categories of the resources indexed for Readiness to Learn project community mapping

<i>Categories</i>	<i>Sub-categories</i>	<i>Examples</i>
Child care	School daycares	
	Formal daycares	Daycares other than school or home
	Drop-in daycares/extracurricular	Group activity services/extracurricular programs, drop-in centres
Literacy	Literacy activities	Book/reading clubs, story time, baby rhyme times, library literacy programs for preschoolers
	Libraries	
	Other	Bookstores, reading kits, video libraries
Early childhood educational resources	Early childhood centres	
	Resource centres	Documentation centres, information and referral to services
	Children's workshops	Saturday workshops, learning activities, crafts and hobbies
	Parents' workshops	Parenting courses, courses on exogamy, child development programs
	Joint workshops (parent-child)	
	Play groups/open house	
	School readiness programs	Kindergarten camps, teaching activities, preschool development
Education and health	French-language public schools	Elementary
	French-language Catholic schools	Elementary
	Public schools – immersion	Elementary
	Catholic schools – immersion	Elementary
	Hospitals	
	Health centres	

<i>Categories</i>	<i>Sub-categories</i>	<i>Examples</i>
Sports and culture	Swimming pools with courses/programs	
	Other sports and recreational activities	Soccer, gymnastics, ballet/dance, skating
	Community/recreation centres	
	Cultural activities	Museums/art galleries with activities/programming, board game evenings, shows, introduction to music courses

Data collection, verification and map creation

Identification of the French-language resources and services targeting families with young children began in September 2007 with the help of the Readiness to Learn project community coordinators. Based on their knowledge of the early childhood community network and their contacts with service providers, the majority of resources were identified by the community coordinators in the field. For the community of Orleans, the list of resources was compiled, in part, using the “Parent Resource Centre of Ottawa” database for the Success by 6 initiative (Ottawa, 2008).

Telephone calls to the organizations and Internet searches were carried out to confirm the target clientele of a given service or program, or to confirm the language or languages in which the resource was offered.

The final listing of resources, including the longitude and latitude coordinates as calculated from postal codes (Statistics Canada, 2006c), was compiled in an Excel database. A second Excel database paired the data for the language layer with the unique code identifying each dissemination area and census tract (Statistics Canada, 2006d). The two Excel databases, in addition to the files for delimiting and subdividing each of the communities (Statistics Canada, 2006e), were imported into MapInfo Professional 7.8, a mapping software program, in order for the geographer to create the maps.

Finally, we wish to point out that the socio-demographic data presented in each of the sub-sections are taken from the 2006 Census (Statistics Canada, 2006b). The historical information comes from each community’s official Web site.

Determining boundaries and territory divisions

Creating maps requires the identification of community boundaries as well as the territory divisions within those boundaries. The choice of community boundaries was based on two considerations: (1) the boundaries used by Statistics Canada; and (2) the geographic scope that would capture the greatest number of Readiness to Learn project participants. Therefore, a community’s boundaries had to be among those recognized by Statistics Canada so they could be paired with data from the 2006 Census and, at the same time, correspond approximately to the regions where the Readiness to Learn project participants reside.

Within a community, two geographic units were used to carve the territory into smaller geographic units. The choice of the geographic unit hinged on the population density of the community: *census tract*⁴⁶ or *dissemination area*.⁴⁷ Readers are invited to refer to Appendix F for a detailed description of the considerations underlying the choice of the standard geographic unit and the information presented. Table 7.2 below presents the standard geographic units used by Statistics Canada to delineate each of the six communities.

Table 7.2: Geographic units by community

Community	Geographic unit	
	To define the boundaries of the community	To carve out/subdivide the community
Cornwall	Census agglomeration	Dissemination area
Durham	Census division	Census tract
		Dissemination area
Edmonton	Census metropolitan area	Census tract
Edmundston	Census agglomeration	Dissemination area
Saint John	Census metropolitan area	Census tract
Orleans	Census metropolitan area	Census tract

Base layer: percentage of Francophones based on mother tongue

One of the objectives of this community mapping exercise was to link the location and scope of French-language resources with the location of the French-speaking population within each community. A base “layer” was therefore created to capture the percentage of Francophones—based on mother tongue at the time of the 2006 Census (Statistics Canada, 2006d)—within each dissemination area or census tract.

Using a database prepared for the Readiness to Learn project by Statistics Canada (2006d), the percentage of persons with *French as their mother tongue* per geographic unit (dissemination area or census tract) was calculated using the method suggested by Forgues and Landry (2006):

$$\% \text{ of Francophones per geographic unit} = \frac{N_{\text{mother tongue} = \text{FR only}} + \frac{1}{2} N_{\text{mother tongue} = \text{FR and ENG}}}{N_{\text{inhabitants in geographic unit}}} \times 100$$

Readers may refer to Appendix F for a detailed description of the considerations underlying the choice of variables for creating the base layers, including the decision not to add the location of Readiness to Learn project participants in the mapping.

⁴⁶ A small, relatively stable area that usually has a population of 2,500 to 8,000 and is located in a large urban centre with a core population of 50,000 or more (Statistics Canada, 2006f).

⁴⁷ Small areas composed of one or more neighbouring blocks, with a population of 400 to 700 persons (Statistics Canada, 2006f).

Calculation of cultural capital and ethnolinguistic vitality

Development of the mother tongue in young children is considered to be the culmination of the socialization process undergone in the family environment, the school or preschool environment and the socio-institutional environment (Landry and Allard, 1997). The socio-institutional environment essentially refers to the individual network of linguistic contacts in the community. It is comprised of several objective dimensions of ethnolinguistic vitality including cultural capital, an agent for transmission of French culture and language. Therefore, educational institutions, including early child care services, the amount and variety of mass media, and access to different cultural resources and various activities in the community are all indicators of cultural capital (Landry, 1994; Gilbert, 2003; for a summary review of vitality, see Guimond, 2003).

In the context of community mapping for the Readiness to Learn project, it becomes interesting to analyze the magnitude of cultural capital present in each community. The notion of “institutional completeness” as posited by Breton (1964) is relevant when considering the development of identity and language abilities among young francophone children living in a minority situation. In this regard, a ratio of children per resource (children:resource) was calculated on the basis of the resources and services deemed essential to young children’s development (Connor and Brink, 1999; CNPF, 2005).⁴⁸ The total of resources **offered in French only** in each of the categories was therefore divided by the number of francophone children aged 0 to 4 years living in the community, based on data from the 2006 Census. The calculation of the ratio only considers resources offered in French only for the following educational and social reasons. From an educational perspective, the development of language skills diverges among English-dominant, French-dominant and bilingual children. Furthermore, the limited knowledge that English-dominant children have of French often delays the learning of French-dominant and bilingual children (Coghlan and Thériault, 2002). From a social perspective, the inclusion of English-dominant children in daycare services is often associated with a greater use of English (Gilbert, 2003, p. 18).

Finally, empirical studies show that access to resources offered in French only can counterbalance the strong influence of the demographic and social weight of English on the daily lives of francophone community members. The presence of multiple French-speaking environments fosters the preservation and development of language and ethnolinguistic identity (Landry, Allard and Devreau, 2007).

7.3 RESOURCES AND PROGRAMS TARGETING YOUNG FRENCH-LANGUAGE FAMILIES

7.3.1 Inventory of resources and programs in Cornwall

Brief socio-demographic profile

Cornwall, situated in the United Counties of Stormont, Dundas and Glengarry and founded in 1784, is Ontario’s easternmost city and borders the St. Lawrence River, 100 km southeast of

⁴⁸ This type of analysis draws on the analysis made by Letouzé (2003, p. 6).

Ottawa. Cornwall is the urban centre for several surrounding communities, such as Long Sault, Ingleside, Avonmore, Martintown and Williamstown.

Population

- The population of Cornwall was 58,485 in 2006.

Children

- In 2006, children aged 0 to 4 years and 5 to 9 years accounted for 4.9 and 5.6% of Cornwall's total population respectively.

French as mother tongue

- 24.7% of Cornwall's inhabitants reported French as their mother tongue.
- Children with French as their mother tongue accounted for 12.3 and 15.6% of children aged 0 to 4 years and 5 to 9 years respectively in 2006.
- The largest concentration of Francophones was found in the city's southeastern neighbourhoods.

Income and employment

- The median income (before taxes) in 2006 for all census families in Cornwall was \$53,984.
- 18% of Cornwall's population was low income (before taxes).
- The unemployment rate in 2006 was 7.3%.
- The two primary industries (based on number of people employed) are business services and manufacturing industries.

Education

- 15.1% of the population aged 25 to 35 years had no certificate, diploma or degree.
- The percentage of individuals with no certificate, diploma or degree increased to 22.3% for individuals aged 35 to 65.

Inventory of resources and programs in Cornwall

In all, 79 French-language resources delivered through 29 points of service were identified in Cornwall. It is interesting to note that French-language resources are split evenly between those offered in French only and those offered in both official languages. Moreover, just one resource is offered in French on demand. In 2006, Cornwall had 347 francophone children (based on mother tongue) aged 0 to 4 years, and community mapping identified 44 different French only resources, resulting in a cultural capital ratio (child:service) of 8:1.

Approximately half of all the resources identified are delivered by four service providers, namely:

- Centre de ressources familiales de l'Estrie (three points of service);
- Ontario Early Years Centre;
- Eastern Ontario Health Unit;

- Cornwall Civic Complex.

Only the Centre de ressources familiales de l'Estrie, out of the four organizations, offers a broad range of programs and services almost entirely in French that fall under all the inventory categories.

With regards to French-language **daycare services**, half of the French-language daycare centres are located in the neighbourhoods with the highest percentage of Francophones, 33.7% francophone or more, whereas the other half is located in moderately francophone neighbourhoods. Cornwall neighbourhoods with relatively small percentages of Francophones (that is, less than 18.2%) have no French-language daycare.

French-language **schools** (public, Catholic) are distributed across the city, but are most often located in neighbourhoods with a relatively high percentage of Francophones. For their part, immersion schools tend to be located in less francophone neighbourhoods.

Literacy activities are only offered in two neighbourhoods characterized by a smaller percentage of Francophones (23% or less). As for **educational resources**, they are evenly distributed across the different francophone concentrations: two points of service for educational resources are located in more francophone neighbourhoods, two more in moderately francophone neighbourhoods, and the last one—offering the largest variety of educational resources—is in a neighbourhood with relatively few Francophones.

There is no **health centre** in the eastern part of Cornwall, an area that is substantially more francophone than the rest of the city. The three hospitals that provide French-language programs and services are found in the southern part of Cornwall, each located in a neighbourhood where the percentage of Francophones differs from the other two (low, medium and high).

Sports and cultural activities are concentrated in the southern and southeastern parts of the city, which have neighbourhoods characterized by a marked difference in the percentage of Francophones, the southeastern part clearly has a stronger concentration of Francophones than the southern part. Both areas offer sports, cultural and recreational activities in French. However, the two swimming pools and the Civic Complex are located in the southern part of the city.

Table 7.3 presents the inventory of resources and programs in Cornwall. The maps found in Appendix F (i.e., F1.1 to F1.5) show the location of each resource category relative to the percentage of Francophones residing in the neighbourhood.

Table 7.3: Number of early childhood and parent resources in Cornwall

<i>Category</i>	<i>Sub-category</i>	<i># per sub-category</i>	<i># offered in French only (%)</i>	<i>Map #</i>
Child care	School daycares	6	10 (100)	F1.1
	Formal daycares	--		
	Drop-in daycares/extracurricular	4		
Literacy	Literacy activities	4	3 (50.0)	F1.2
	Libraries	2		
	Other	--		
Early childhood educational	Early childhood centres	1	19 (73.1)	F1.3
	Resource centres	2		

Category	Sub-category	# per sub-category	# offered in French only (%)	Map #
resources	Children's workshops	3		
	Parents' workshops	9		
	Joint workshops (parents-children)	3		
	Play groups/open house	1		
	School readiness programs	7		
Education and health	French-language public schools	2	7 (43.8)	F1.4
	French-language Catholic schools	4		
	Public schools – immersion	1		
	Catholic schools – immersion	5		
	Hospitals	3		
	Health centres	1		
Sports and culture	Community/recreation centres	1	5 (23.8)	F1.5
	Swimming pools with courses/programs	2		
	Other sports and recreational activities	12		
	Cultural activities	6		
TOTAL		79	44 (55.7)	

7.3.2 Inventory of resources and programs in Durham

Brief socio-demographic profile

Durham Region is located immediately to the east of the City of Toronto. The region is characterized by a series of communities that border Lake Ontario, along with a variety of small villages and farms. The municipal region of Durham was created in 1974 and it includes Pickering, Ajax, Whitby and Oshawa. Although Pickering and Ajax have a relatively recent history, dating back to the Second World War, other towns and villages in the region, such as Oshawa, Whitby and Bowmanville, were settled by European colonists in the late 1700s and incorporated as cities in the mid-1800s.

Population

- The population of Durham was 561,258 in 2006.

Children

- In 2006, children aged 0 to 4 years and 5 to 9 years accounted for 5.8 and 6.8% of Durham's total population respectively.

Mother tongue

- 1.8% of Durham's inhabitants reported French as their mother tongue.
- Children with French as their mother tongue accounted for 1.1 and 1.3% of children aged 0 to 4 years and 5 to 9 years respectively in 2006.

- The neighbourhoods located in southern Durham (Pickering, Ajax, Whitby, Oshawa and Clarington) have a larger percentage of Francophones than neighbourhoods located in the northern part of the community.

Income and employment

- The median income (before taxes) in 2006 for all census families in Durham was \$82,329.
- 9.3% of Durham's population was low income (before taxes).
- The unemployment rate in 2006 was 6.3%.
- The three largest industries (based on number of people employed) are business services, other services and manufacturing industries.

Education

- 29.2% of the population aged 25 to 35 years had no certificate, diploma or degree.
- The percentage of individuals with no certificate, diploma or degree decreased to 14.1% for individuals aged 35 to 65.

Inventory of resources and programs in Durham⁴⁹

In all, 28 resources were identified in Durham as being accessible in French. According to the information available when the data were collected, 19 of these resources are offered in French only, four in both official languages and five in French on demand. In 2006, Durham had 370 francophone children (based on mother tongue) aged 0 to 4 years, and community mapping identified 19 different resources offered in French only. The resulting cultural capital ratio (child:service) is therefore 19:1.

The percentage of Francophones living in Durham is among the lowest in the six communities that were studied. With so few Francophones, it is not surprising that, in the southern part of the region, there is a variation of only 4% between the neighbourhoods with the lowest and the highest percentage of Francophones. It should be noted that the results in this subsection relate exclusively to southern region of Durham, as the northern region has no French-language resources or point of service (see map F2.6). It should be also noted that no French-language resources are offered east of Central Park Road. In addition, French-language services are, for the most part, decentralized. Only two organizations offer more than two services and/or resources in French only, namely:

- Association des femmes canadiennes-françaises (AFCF);
- Conseil des organismes francophones de la région de Durham (COFRD).

Together, AFCF and COFRD are the only points of access that offer multiple services in French only (e.g., cultural activities, play groups, a bookstore and daycare services). These two service providers are located within a heavily populated area, in terms of both the general population and the francophone population of Durham (2.61% francophone and more). Far from

⁴⁹ Readers are reminded that the community mapping results for Durham Region are presented on the basis of census tracts and dissemination areas. As a result, the southern section of Durham is divided into dissemination areas and is comprised of five maps. Just one map is presented for northern Durham owing to an absence of resources.

being a francophone neighbourhood, we can at least say that these two establishments give francophone parents and young children the possibility of accessing a variety of resources within a short distance.

Out of the five French-language **daycares** identified in Durham, four are French-speaking only while the fifth offers a French-language immersion service. There are also three French-language Catholic **schools** and one French-language public school. The daycares are almost all located in southern Durham, a region comprised of a slightly greater number of Francophones, relatively speaking. One daycare centre is located in the western part of the region, once again in a neighbourhood with relatively more Francophones than average in Durham. We observed the same phenomenon with regard to the locations of the schools.

Literacy activities are offered through four points of service, three of which offer this activity in French only. Generally speaking, there are only a small number of literacy activities targeting children. Of the five literacy activities that were identified, four are offered only in French. With regards to **educational resources**, half are available in French on demand only. It should be noted that parents' workshops are included in this category. The remainder of educational resources is offered primarily in French only. Only one resource is offered in both official languages.

There is no **health centre** or hospital that provides French-language health care services or programming in Durham.

Finally, the situation is slightly more encouraging with regards to **sports and cultural activities**. A few activities are offered in French only and available on a half-time basis. Cultural activities tend to be offered in neighbourhoods bordering Highway 401, whereas sports and recreational activities are located slightly north of the 401 in slightly less francophone neighbourhoods.

Table 7.4 presents the inventory of resources and programs in Durham. The maps found in Appendix F (i.e., F2.1 to F2.6) show the location of each resource category in relation to the percentage of Francophones residing in the neighbourhood.

Table 7.4: Number of early childhood and parent resources in south Durham

<i>Category</i>	<i>Sub-category</i>	<i># per sub-category</i>	<i># offered in French only (%)</i>	<i>Map #</i>
Child care	School daycares	4	4 (80.0)	F2.1
	Formal daycares	1		
	Drop-in daycares/extracurricular	--		
Literacy	Literacy activities	1	4 (80.0)	F2.2
	Libraries	3		
	Other	1		
Early childhood educational resources	Early childhood centres	--	3 (37.5)	F2.3
	Resource centres	3		
	Children's workshops	--		
	Parents' workshops	3		
	Joint workshops (parents-children)	--		
	Play groups/open house	2		

Category	Sub-category	# per sub-category	# offered in French only (%)	Map #
	School readiness programs	--		
Education and health	French-language public schools	1	4 (100)	F2.4
	French-language Catholic schools	3		
	Public schools – immersion	--		
	Catholic schools – immersion	--		
	Hospitals	--		
	Health centres	--		
Sports and culture	Community/recreation centres	--	4 (66.7)	F2.5
	Swimming pools with courses/programs	--		
	Other sports and recreational activities	2		
	Cultural activities	4		
TOTAL		28	19 (67.9)	

7.3.3 Inventory of resources and programs in Edmonton

Brief socio-demographic profile

Edmonton, founded in 1904, is the provincial capital of Alberta. It is located in the province's central region, on the banks of the North Saskatchewan River and east of two famous national parks: Banff and Jasper, located in the Rockies. Edmonton is the sixth largest city in Canada and the country's most northern major urban centre.

Population

- The population of Edmonton was 1,034,945 in 2006.

Children

- In 2006, children aged 0 to 4 years and 5 to 9 years accounted for 5.8 and 5.9% of Edmonton's total population respectively.

Mother tongue

- 2.2% of Edmonton's inhabitants reported French as their mother tongue.
- Children with French as their mother tongue accounted for 1.0 and 1.1% of children aged 0 to 4 years and 5 to 9 years respectively in 2006.
- The largest concentration of Francophones can be found in the northwest (including the St. Albert region) and southeast neighbourhoods, and in the francophone neighbourhood located in Edmonton's central district north of Marie-Anne Gaboury St. (91st Street).

Income and employment

- The median income (before taxes) in 2006 for all census families in Edmonton was \$69,214.
- 17.7% of Edmonton's population was low income (before taxes).

- The unemployment rate was 4.9% in 2006.
- The three largest industries (based on number of persons employed) are business services, other services and retail trade.

Education

- 11.9% of the population aged 25 to 35 years had no certificate, diploma or degree.
- The percentage of individuals with no certificate, diploma or degree increased slightly to 15.6% for individuals aged 35 to 65.

Inventory of resources and programs in Edmonton

A total of 58 French-language resources delivered through 36 points of service were identified in Edmonton. All of these resources are found in Edmonton's central district or in the community of St. Albert in the city's northwest. Slightly more than half of the resources are offered in French only and slightly less than half in both official languages. Three resources are offered in French on demand only. In 2006, Edmonton had 607 francophone children (based on mother tongue) aged 0 to 4 years, and community mapping identified 34 different resources offered in French only. The resulting cultural capital ratio (child:service) was therefore 18:1.

The percentage of Francophones living in Edmonton is, like Durham, among the lowest in the six communities in the study. Consequently, there is little variation in the percentage of Francophones across Edmonton's neighbourhoods. The interpretation of results must take into account that this small population is distributed over a large territory.

Half of the services and resources offered in French only are delivered by two service providers:

- La Société francophone des arts visuels de l'Alberta;
- La Cité francophone d'Edmonton.

The Société francophone des arts visuels de l'Alberta is an organization that provides Edmonton's francophone population with the broadest range of artistic activities (e.g., art workshops, summer camps) for children aged 5 years and older, as well as an art gallery. The Cité francophone d'Edmonton offers the widest range of French-language resources, most of which are made available to users. It is located in a francophone neighbourhood and houses a number of service providers under one roof, including the Conseil scolaire du Centre Nord, Le Carrefour bookstore, Institut Guy-Lacombe de la famille, Fédération des parents francophones de l'Alberta, La P'tite scène and L'Uni Théâtre. Through these different service providers, La Cité provides the French-speaking community with literacy programs, a library, a book distribution service and other French-language resources, family and childhood support services, parent training on themes such as exogamy and child development, play groups, cultural shows and French theatre.

With regards to French-language **daycare services**, five junior kindergartens and two daycare centres were identified. It should be noted that one of the daycare centres is only open to military families. The junior kindergartens and daycare centres are all located in areas of Edmonton characterized by a relatively large concentration of Francophones. No daycare centre or junior kindergarten is located in a neighbourhood that is less than 2% francophone.

The five French-language **schools** that were identified are relatively well distributed throughout the city, except in Edmonton's southern region, where no French-language school is found. Immersion schools are numerous in the south, as they are in the north, and they tend to be located in neighbourhoods with relatively few Francophones. That being said, immersion schools can be found, nonetheless, in neighbourhoods with a greater concentration of Francophones.

In the north of the Edmonton urban area, there are three libraries with French-language resources, but none of them offers **literacy activities in French**. There is no library with French-language resources in St. Albert, or in the south or west of the city. Only La Cité francophone provides Francophones with a variety of literacy activities in French only. La Cité is also the place that offers the vast majority of the French-language educational resources included in the inventory. The other resources in this category are scattered throughout the city. With regards to **educational resources**, some are offered to parents and/or children in a few of the outlying neighbourhoods. For example, they are given a few kilometres north of St. Albert, in a much less densely populated neighbourhood with relatively few Francophones, or else in the city's southwest at the intersection of two neighbourhoods characterized by a very low concentration of Francophones. A few of these sites offer educational resources in French only, whereas the others tend to offer them in both official languages.

There is one **health centre** providing French-language services and located in the francophone neighbourhood, in proximity to La Cité francophone. No hospital with French-language services was identified.

Sports and cultural activities are concentrated within or in proximity to Edmonton's francophone neighbourhood. These activities are distributed evenly between those available in French only (via the Société francophone des arts visuels de l'Alberta and La Cité francophone) and those offered in both English and French in the other sites. The francophone neighbourhood also provides its residents with a swimming pool that offers swimming courses in French.

Table 7.5 presents the inventory of resources and programs for Edmonton. The maps found in Appendix F (i.e., F3.1 to F3.5) show the location of each resource category in relation to the percentage of Francophones residing in the neighbourhood.

Table 7.5: Number of early childhood and parent resources in Edmonton

<i>Category</i>	<i>Sub-category</i>	<i># per sub-category</i>	<i># offered in French only (%)</i>	<i>Map #</i>
Child care	School daycares	5	6 (85.7)	F3.1
	Formal daycares	2		
	Drop-in daycares/extracurricular	--		
Literacy	Literacy activities	1	6 (100)	F3.2
	Libraries	4		
	Other	1		
Early childhood educational resources	Early childhood centres	--	9 (81.8)	F3.3
	Resource centres	1		
	Children's workshops	2		
	Parents' workshops	5		
	Joint workshops (parents-children)	1		

Category	Sub-category	# per sub-category	# offered in French only (%)	Map #
	Play groups/open house	1		
	School readiness programs	1		
Education and health	French-language public schools	6	7 (31.8)	F3.4
	French-language Catholic schools	--		
	Public schools – immersion	12		
	Catholic schools – immersion	3		
	Hospitals	--		
	Health centres	1		
Sports and culture	Community/recreation centres	--	6 (50.0)	F3.5
	Swimming pools with courses/programs	1		
	Other sports and recreational activities	6		
	Cultural activities	5		
TOTAL		58	34 (58.6)	

7.3.4 Inventory of resources and programs in Edmundston

Brief socio-demographic profile

Edmundston is located in northwestern New Brunswick, in Madawaska County. The city shares its borders with Quebec and the United States. In 1998, the four municipalities of Saint-Jacques, Verret, Edmundston and Saint-Basile were amalgamated to form today's City of Edmundston. Saint-Basile was the area's first settlement, dating back to the mid-18th century.

Population

- The population of Edmundston was 21,442 in 2006.

Children

- In 2006, children aged 0 to 4 years and 5 to 9 years accounted for 4.1 and 4.6% of Edmundston's total population respectively.

Mother tongue

- 94.3% of Edmundston's inhabitants reported French as their mother tongue.
- Children with French as their mother tongue accounted for 96.3 and 95.6% of children aged 0 to 4 years and 5 to 9 years respectively in 2006.
- Like Edmonton and Durham, there is little variation across neighbourhoods in terms of the percentage of Francophones. All of Edmundston's neighbourhoods are between 90 to 99% francophone. Discussions as to where resources are situated in relation to the location of more or less francophone neighbourhoods must be tempered by this fact.

Income and employment

- The median income (before taxes) in 2006 for all census families in Edmundston was \$55,170.

- 12.3% of Edmundston's population was low income (before taxes).
- The unemployment rate was 9.0%.
- The three largest industries (based on number of people employed) are: other services, manufacturing industries, and health care and social services.

Education

- 12.2% of the population aged 25 to 35 years had no certificate, diploma or degree.
- The percentage of individuals with no certificate, diploma or degree doubled to 23.0% among individuals aged 35 to 65.

Inventory of resources and programs in Edmundston

A total of 37 French-language resources delivered through 20 points of service were identified in Edmundston. Nearly two-thirds of the resources are offered in French only, with the remainder being offered in both official languages. In 2006, Edmundston had 837 francophone children (based on mother tongue) aged 0 to 4 years, and community mapping identified 28 different resources offered in French only, resulting in a cultural capital ratio (child:service) of 30:1.

Edmundston is a city composed mainly of Francophones, between 90 to 99%. Consequently, the interpretation of the results should reflect this high concentration of Francophones.

The majority of resources (15 in total) are delivered by the following three institutions:

- Mgr. W.J. Conway Public Library
- Regional Health Authority 4
- Regional recreation complex

Together, Regional Health Authority 4 and the Mgr. W.J. Conway Public Library offer virtually all of the resources identified in the literacy activities category in French only. Regional Health Authority 4 offers a number of reading readiness workshops under the *Parle-moi* program. As for the public library, we find a reading club, story time, a *Bébés à la bibliothèque* program, crafts and, of course, the library itself. Finally, the regional recreation complex offers almost half of the sports and cultural activities that were identified.

Daycare services and drop-in daycares in Edmundston are all French-speaking, with the exception of two that offer services in both French and English. The daycare services are located throughout the city and do not seem to be distributed on the basis of percentages of Francophones.

There are three French-language public **schools**, each located in a neighbourhood of the city with a different percentage of Francophones than the other two (relatively small, medium and large). There are no immersion schools in Edmundston.

Literacy activities are located in proximity to Edmundston's downtown area. With respect to **educational resources**, two of the three resources identified are offered by Développement de l'Enfant du Madawaska in the form of parent workshops that cover the themes of parenting and childhood development. As in the case of literacy activities, the points of service are located in the most heavily populated area of Edmundston.

The Edmundston area has a hospital and a Public Health office providing French-only services that target young families.

Sports and cultural activities are offered in both French and English, unlike the other resources, which are offered in French only. According to the community coordinator, although these activities are offered in both official languages, the language usually spoken during these activities is French. The vast majority of these activities are located in the central area of Edmundston, with the exception of one cultural activity that takes place in the city's northwest.

Table 7.6 presents the inventory of resources and programs in Edmundston. The maps found in Appendix F (i.e., F4.1 to F4.5) show the location of each resource category in relation to the percentage of Francophones residing in the neighbourhood.

Table 7.6: Number of early childhood and parent resources in Edmundston

<i>Category</i>	<i>Sub-category</i>	<i># per sub-category</i>	<i># offered in French only (%)</i>	<i>Map #</i>
Child care	School daycares	--	7 (77.8)	F4.1
	Formal daycares	5		
	Drop-in daycares/extracurricular	4		
Literacy	Literacy activities	7	8 (100)	F4.2
	Libraries	1		
	Other	--		
Early childhood educational resources	Early childhood centres	--	8 (100)	F4.3
	Resource centres	--		
	Children's workshops	--		
	Parents' workshops	4		
	Joint workshops (parents-children)	3		
	Play groups/open house	1		
	School readiness programs	--		
Education and health	French-language public schools	3	4 (80.0)	F4.4
	French-language Catholic schools	--		
	Public schools – immersion	--		
	Catholic schools – immersion	--		
	Hospitals	1		
	Health centres	1		
Sports and culture	Community/recreation centres	2	1 (14.3)	F4.5
	Swimming pools with courses/programs	1		
	Other sports and recreational activities	3		
	Cultural activities	1		
TOTAL		37	28 (75.7)	

7.3.5 Inventory of resources and programs in Saint John

Brief socio-demographic profile

Saint John, located at the mouth of the Saint John River and the Bay of Fundy, is the largest city in New Brunswick. The explorers Sieur de Monts and Samuel de Champlain arrived at the mouth of the river on June 24, 1604, the feast day of Saint John the Baptist, and named the river in his honour. Incorporated in 1785, Saint John is the oldest incorporated municipality in Canada and the largest city in New Brunswick.

Population

- The population of Saint John was 122,389 in 2006.

Children

- In 2006, children aged 0 to 4 years and 5 to 9 years accounted for 5.2 and 5.7% of Saint John's total population respectively.

Mother tongue

- 4.8% of Saint John's inhabitants reported French as their mother tongue.
- Children with French as their mother tongue accounted for 2.5 and 2.4% of children aged 0 to 4 years and 5 to 9 years respectively in 2006.
- The largest concentration of Francophones can be found in Saint John's central area.

Income and employment

- The median income (before taxes) in 2006 for all census families in Saint John was \$35,565.
- 14.7% of Saint John's population was low income (before taxes).
- The unemployment rate was 8.0%.
- The three largest industries (based on number of people employed) are business services, other services and health care and social services.

Education

- 7.1% of the population aged 25 to 35 years had no certificate, diploma or degree.
- The percentage of individuals with no certificate, diploma or degree increased to 16.4% among individuals aged 35 to 65.

Inventory of resources and programs in Saint John

A total of 24 resources, delivered through 8 points of service, were identified in Saint John. All of the resources are offered in French only. In 2006, Saint John had 157 francophone children (based on mother tongue) aged 0 to 4 years, and community mapping identified 24 different resources offered in French only, resulting in a cultural capital ratio (child:service) of 7:1.

The percentage of Francophones residing in Saint John is among the lowest in the six communities in the study. Consequently, little variation can be seen in the percentage of

Francophones from one neighbourhood to the next. This small population distributed across the territory should be kept in mind when interpreting the results.

Two-thirds of the French-language resources are delivered by two points of service, namely:

- Centre communautaire Samuel-de-Champlain
- Centre de ressources familiales (S.J.) Inc.

The Centre communautaire Samuel-de-Champlain houses a number of service providers, including Le Cormoran Library, Médisanté Saint-Jean, Association sportive Samuel-de-Champlain and Théâtre Louis Vermeersch. The site also provides francophone parents with access to multiple resources, such as daycare services, a public school, story time, a French camp for children aged 4 to 6 years and their families, a library, a health centre and sports activities. As for the Centre de ressources familiales (S.J.) Inc., it offers a series of literacy activities and educational resources, including story time, a library and a resource centre, crafts workshops, a series of parent workshops and play groups. All other resources are offered in a decentralized manner, that is, each institution identified offers just one or two resources, and only in one category.

Saint John has just one provider of **daycare services** and just one French-language **school**. These two services are located in the Centre communautaire Samuel-de-Champlain, north of downtown in a relatively French-speaking neighbourhood (more than 6%).

Literacy activities are only offered at two locations, at the Centre communautaire Samuel-de-Champlain and at the Centre de ressources familiales. The first is located in the northern downtown area, whereas the second point of service is located downtown. Access to **educational resources** is almost only possible in the downtown area, at the Centre de ressources familiales—this point of service offers a resource centre, parent and child workshops, and play groups.

A **health centre** is located in the Centre communautaire Samuel-de-Champlain. There are also two hospitals located in the downtown area of Saint John.

Finally, two types of **sports and cultural activities** are offered at the Centre communautaire Samuel-de-Champlain and a third is provided in the form of guided visits at the New Brunswick Museum.

Table 7.7 presents the inventory of resources and programs in Saint John. The maps found in Appendix F (i.e., F5.1 to F5.5) show the location of each resource category in relation to the percentage of Francophones residing in the neighbourhood.

Table 7.7: Number of early childhood and parent resources in Saint John

<i>Category</i>	<i>Sub-category</i>	<i># per sub-category</i>	<i># offered in French only (%)</i>	<i>Map #</i>
Child care	School daycares	1	1 (100)	F5.1
	Formal daycares	--		
	Drop-in daycares/extracurricular	--		
Literacy	Literacy activities	3	5 (100)	F5.2
	Libraries	2		
	Other	--		

Category	Sub-category	# per sub-category	# offered in French only (%)	Map #
Early childhood educational resources	Early childhood centres	--	11 (100)	F5.3
	Resource centres	1		
	Children's workshops	1		
	Parents' workshops	7		
	Joint workshops (parents-children)	--		
	Play groups/open house	1		
	School readiness programs	1		
Education and health	French-language public schools	1	4 (100)	F5.4
	French-language Catholic schools	--		
	Public schools – immersion	--		
	Catholic schools – immersion	--		
	Hospitals	2		
	Health centres	1		
Sports and culture	Community/recreation centres	--	3 (100)	F5.5
	Swimming pools with courses/programs	--		
	Other sports and recreational activities	1		
	Cultural activities	2		
TOTAL		24	24 (100)	

7.3.6 Inventory of resources and programs in Orleans

Brief socio-demographic profile

Orleans is a suburb of Ottawa (Ontario) and is located east of the capital, approximately 16 km from downtown, along the Ottawa River. Orleans has been part of the City of Ottawa since 2001. Orleans was created in 1922, when it was known as St-Joseph d'Orléans. Orleans continues to have a large French-speaking population, although it has been declining in recent years.

Population

- The population of Orleans was 95,470 in 2006.

Children

- In 2006, children aged 0 to 4 years and 5 to 9 years accounted for 4.3 and 5.4% of Orleans' total population respectively.

Mother tongue

- 33.0% of Orleans inhabitants reported French as their mother tongue.
- Children with French as their mother tongue accounted for 29.4 and 29.3% of children aged 0 to 4 years and 5 to 9 years respectively in 2006.
- The three neighbourhoods with the largest percentage of Francophones are located in the central region of Orleans, at the intersection of St. Joseph Boulevard and Belcourt

Boulevard, east of the intersection of Tenth Line Road and Innes Road, and in the east corridor of Trim Road.

Income and employment

- The median income (before taxes) in 2006 for all census families in Orleans was \$110,901.
- 4.87% of Orleans' population was low income (before taxes).
- The unemployment rate was 4.9% in 2006.
- The three largest industries (based on number of people employed) are public administration, retail trade, and health care and social assistance.

Education

- The percentage of individuals with no certificate, diploma or degree was 5.4% for people aged 25 to 64.⁵⁰

Inventory of resources and programs in Orleans

A total of 130 French-language resources delivered through 49 points of service were identified in Orleans, divided more or less evenly between those offered in French only and those offered in both official languages. Only two resources are offered in French on demand. In 2006, Orleans had 1,210 francophone children (based on mother tongue) aged 0 to 4 years, and community mapping identified 79 different resources offered in French only, resulting in a cultural capital ratio (child:service) of 15:1.

Orleans has numerous institutions providing more than three resources. However, the following three points of service are distinguished by providing, in general, several resources in almost all of the categories identified:

- The grouping of institutions and organizations on Carrière Street (between Belcourt Boulevard and Orleans Boulevard)
- La Coccinelle daycare centres
- Orleans-Cumberland Community Resource Centre and Early Years Centre (EYC)

Daycare services are offered equally in French only and in both official languages. School daycares and drop-in daycares are located both in neighbourhoods with relatively few Francophones (less than 28.3%) and in neighbourhoods that are more than 35% francophone. Formal daycares are located in less francophone neighbourhoods.

Orleans has 12 French-language **schools** and 15 immersion schools. All of the French-language schools, except one, are located in neighbourhoods characterized by relatively more Francophones, while there is a slight tendency for immersion schools to be located in less francophone neighbourhoods. It was noted, however, that some of the immersion schools are located in the same neighbourhoods as French-language schools.

The Orleans community has two French-language libraries, each offering **literacy activities**. Besides lending books, the library offers a wide variety of literacy activities, such as story time

⁵⁰ Data are not available separately for adults aged 25 to 35 years and those aged 35 to 65 years.

for families and several workshops such as *Bébés et tout-petits à la biblio*. In addition, La Coccinelle daycares provide families with a reading kit and video library lending service. Only one of these literacy services is located in the neighbourhood with the largest percentage of Francophones.

The Orleans community also provides its francophone residents with the entire range of **educational resources** identified in the mapping taxonomy, most often through points of service that offer multiple ressources. It should be noted that educational resources tend to be grouped in less francophone neighbourhoods.

There is no French-language **health centre** or hospital in the community.

Sports and cultural activities in Orleans are distributed evenly across the city and are equally offered in French only and in both official languages.

Table 7.8 presents the inventory of resources and programs in Orleans. The maps found in Appendix F (i.e., F6.1 to F6.5) show the location of each resource category in relation to the percentage of Francophones residing in the neighbourhood.

Table 7.8: Number of early childhood and parent resources in Orleans

<i>Category</i>	<i>Sub-category</i>	<i># per sub-category</i>	<i># offered in French only (%)</i>	<i>Map #</i>
Child care	School daycares	21	29 (69.0)	F6.1
	Formal daycares	8		
	Drop-in daycares/extracurricular	13		
Literacy	Literacy activities	5	13 (76.5)	F6.2
	Libraries	2		
	Other	10		
Early childhood educational resources	Early childhood centres	1	19 (65.5)	F6.3
	Resource centres	7		
	Children's workshops	6		
	Parents' workshops	5		
	Joint workshops (parents-children)	1		
	Play groups/open house	7		
	School readiness programs	2		
Education and health	French-language public schools	4	12 (44.4)	F6.4
	French-language Catholic schools	8		
	Public schools – immersion	7		
	Catholic schools – immersion	8		
	Hospitals	--		
	Health centres	--		

<i>Category</i>	<i>Sub-category</i>	<i># per sub-category</i>	<i># offered in French only (%)</i>	<i>Map #</i>
Sports and culture	Community/recreation centres	1	6 (40.0)	F6.5
	Swimming pools with courses/programs	--		
	Other sports and recreational activities	10		
	Cultural activities	4		
TOTAL		130	79 (60.8)	

7.4 DISCUSSION OF RESULTS

This last section will briefly discuss the key findings from the community mapping, the limitations of the analysis and, finally, the implications of these results for future analyses.

Key findings

The results relating to **daycare services, junior kindergartens and drop-in daycares** highlight that, overall, many of the institutions that serve the francophone population offer services in French only. For the communities of Cornwall and Saint John, all these services are provided solely in French. In the communities of Durham, Edmonton and Edmundston, close to 80% of these services are provided in French only. In this respect, the community of Orleans stands out from the others with 69% of services provided in French only. The rest of the services are provided in both official languages or in French on demand.

Although this aspect was not investigated in the mapping analysis, we feel it is important to point out that the daycare service providers participating in the Readiness to Learn project keep waiting lists for young preschool-age children. This deficiency in French-language daycare services was also noted by Gilbert (2003) in her study on six Canadian minority francophone communities, where she spoke of several challenges faced by daycare services, including the hiring and retention of early childhood-qualified francophone staff, the lack of French-language educational resources, and precarious financial situations. These challenges are also present in the daycares participating in the Readiness to Learn project. This situation is a cause of concern for the vitality of francophone communities, as many authors advocate that French-language daycare services and schooling are key vectors of community vitality (e.g., Landry and Allard, 1997; Gilbert, 2003). This statement is based on the counterbalance theory posited by Landry and Allard (1997) that daycare services and the school milieu can compensate for the strong influence of the demographic and social weight of English.

Literacy activities in the communities of Edmonton, Edmundston and Saint John are all offered in French only. The communities of Durham and Orleans provide 80% of these activities in French only, with the remainder provided in both official languages. Cornwall is the community that has the smallest percentage, i.e. 50%, of these activities available in French only, with the remainder provided in both official languages. Regarding the availability of French-language **educational resources**, it is in this area that a wide discrepancy can be seen among communities. Only the communities in New Brunswick provide all of these resources in French only. The availability of such resources in French only ranges from 66% to 82% in the

communities of Cornwall, Edmonton and Orleans. Durham is the community that has the smallest percentage of educational resources provided in French only, i.e., 40%, with the remainder available in both languages or in French on demand.

These results exemplify one of the greatest challenges facing the linguistic minority in certain communities: the provision of literacy activities and educational resources in both official languages. It is crucial that the socio-institutional predominance of English be counterbalanced by modifying the social environment in which a child is immersed (Coghlan and Thériault, 2002). In the view of Salerno (in Lafrance, 1993), exposure to oral and written French in the preschool years is crucial for a child to develop strong linguistic proficiency. In addition, activities such as story time and book borrowing at libraries enable the unique elements of francophone culture to be transmitted to children. This exposure to French is even more important for children growing up in an extremely minority francophone environment where, by mere demographic weight, English predominates in all aspects of daily life (Gilbert, 2003). Moreover, it has been seen in minority language communities that the majority language often wins out when a service is offered in the minority language alongside the majority language (e.g., Gilbert, 2003, p. 18; Hébert, Afatsawo and Berti, 2003).

The largest concentrations of programs offered in both official languages can be found in the **sports, cultural and recreational activities** category, with the exception of the City of Saint John, where all sports and leisure activities take place in French only. Edmundston, a community with a strong francophone majority, has just one activity that is offered only in French. In the other communities, 24% (for Cornwall) to 66% (for Durham) of sports and leisure activities take place only in French. The majority of other activities take place in both official languages with a smaller percentage offered in French on demand. The importance of having access to francophone milieus other than the family and the preschool/school milieus is highlighted in the model put forward by Landry and his colleagues (1997, 2007). These social activities are important for children as well as parents, for creating a francophone social network in a francophone minority context. The possibility to interact in French is a key element for the development of francophone ethnolinguistic vitality (Landry, 1994; Landry, Allard and Deveau, 2007).

Cultural capital

An analysis of the **child:service ratio** reveals three levels of cultural capital, presented in ascending order: Edmundston, Durham, Edmonton, Orleans, Cornwall and Saint John. The profile of these results is interesting both in terms of children's general development and in terms of the preservation of French language and culture in a minority setting. Specifically, Edmundston has a ratio of 30 children per French-language service—a level of cultural capital that is likely insufficient to meet the needs of young children. This claim is founded on the observation that, generally speaking, activities and programs targeting young children serve approximately 10 or so participants (e.g., literacy activities). Although the ratio is lower in Edmundston, the ethnolinguistic vitality of the francophone community is not in jeopardy, as the community has a very strong concentration of Francophones in addition to enjoying high levels of political and economic capital.

The communities of Durham and Edmonton exhibit a medium level of cultural capital. A ratio of 19 and 18 children respectively per French-language service or program was found. This

level of cultural capital most likely demonstrates an insufficient infrastructure to meet the needs of young children. In terms of ethnolinguistic vitality, the results suggest that considerable challenges lay ahead. Since the social milieu has a low francophone vitality, it is even more important that French-language services and programs be offered to counterbalance the dominance of the anglophone milieu.

The community of Orleans also exhibits a medium level of cultural capital with a ratio of 15 children per French-language service. This result is somewhat surprising owing to the relatively strong concentration of Francophones in the community. In actual fact, close to two-thirds of the services and programs targeting early childhood are offered in both official languages. The community of Orleans has a broad range of services and programs targeting early childhood and benefits from a well developed infrastructure for meeting the needs of this population. However, the limited number of services and programs offered in French only raises a doubt as to the community's ability to maintain francophone ethnolinguistic vitality in an English-dominant setting.

The communities of Cornwall and Saint John both enjoy a good level of cultural capital, with a ratio of 8 and 7 children respectively per French-language service or program. This level of cultural capital represents a well developed francophone infrastructure to meet the needs of young children. Also noteworthy is the absence of activities or programmes offered in both official languages in Saint John. The presence of good cultural capital bodes well for the community's capacity to maintain francophone ethnolinguistic vitality in an environment where English predominates.

It should come as no surprise that this ratio of cultural capital—one of the objective dimensions of a minority francophone community's vitality—reveals a different profile from the one found through a parent-reported measure of subjective vitality (see Section 4.5.3 of Chapter 4). The cultural capital index reflects the socio-institutional milieu specific to young children by identifying the resources and programs targeting that segment of the population. Conversely, the subjective vitality index measures how often French is used in public areas (i.e., places of business, municipal government, community organizations, places of employment and government services) and access to French-language services (media)—elements relevant to the socio-institutional milieu in which adults evolve.

Limitations

Three limitations should be highlighted. First, the inventory of resources and services is organized on the basis of the information available at the time it was collected. Since the range of services and resources offered within a community is constantly changing, the results presented here are, at the very most, a general indication of the cultural capital in the communities. It must be remembered that some services and programs were not identified, for example, certain health services, programs or interventions targeting children with special needs, and family daycare services. In addition, the results presented here give absolutely no consideration to the presence of electronic resources, nor real-life situations where services are shared by the inhabitants of the surrounding communities. Hypothetically, a family living less than two kilometres from a library may quite easily fail to use that resource, but travel to a library located in another community.

Second, the cultural capital index does not consider the quality of the services or programs being offered, their ability to accommodate users, or barriers to access (e.g., waiting lists, cost

too high for low-income families). It should also be noted that the index considers just one of the objective dimensions and none of the subjective dimensions of ethnolinguistic vitality. At the very most, it establishes the presence or absence of certain French-language services and programs deemed important to optimize the general development of young children living in a francophone minority context.

Finally, the constructs of institutional infrastructure and cultural capital, and their close relationship with the availability of resources and institutions in the minority language, are complex and cannot be fully measured with the resources identified in this mapping. A more extensive analysis should identify a range of more global factors, examining aspects such as the language's legal status, economic and political factors of the dominant culture, decision-making authority, mass media, government services and industries (Guimond, 2003).

Future analyses

The community maps created under the Readiness to Learn project serve to link the early childhood resources available in the French language and their location with the distribution of the francophone population. This type of analysis, however, does not provide information relevant to determining the dynamic between community resources and the development of children growing up in a francophone minority context. An analysis of the use of programs, services and resources needs to be completed by analyzing the target population's needs and the success of reaching that population and ensuring their use of the programs, services and resources. In this context, it is important to identify the barriers to access and the measures needed to mitigate these barriers. It is also important to identify the beliefs and reasons underlying parents' choices to use services or programs deemed central for language development and francophone cultural identity for children living in a minority setting (Landry et al., 2007). For example, Allard (n. d.) summarizes a number of beliefs relating to language learning that influence parents in, amongst other things, their choice to enrol their children in an immersion, French-language or English-language school. In addition, Gilbert (2003) reports that the desire to transmit the French language to their children is one of the main reasons why parents enrol their children in a French-language daycare service. However, the author highlights that the importance given to preserving the French language and culture is not necessarily shared evenly by all parents (see also Hébert et al., 2003).

Given the above points, the impact analyses will focus on the information gathered from the parent surveys, which contain direct measurements of the types of resources and services used, the frequency with which they are used, the language in which activities take place, the reasons underlying their choice, and, finally, the barriers to access that are encountered. Certain dimensions of objective vitality can be combined with dimensions of subjective vitality as measured by parents. This exercise will provide a richer understanding of the dynamics taking place in communities where children grow up in a minority francophone environment.

8.0 Conclusions

The Readiness to Learn in Minority Francophone Communities project tests a preschool child care program whose objective is to develop children's language skills, knowledge and use of French, and awareness of and identification with the francophone culture, as well as to foster their readiness for school and their overall development. The project aims to highlight the advantages of this preschool program for children living in a minority francophone environment compared to children who are not exposed to the program. An initial cohort started the program in the fall of 2007 in six minority francophone communities (Saint John and Edmundston in New Brunswick, Orleans, Cornwall and Durham in Ontario, and Edmonton in Alberta). A second cohort began the program in the fall of 2008 in two communities (Orleans and Cornwall). Children's development will be measured until 2011 for the first cohort and until 2012 for the second cohort, when the children will be Grade 2. Readers should note that the analysis results presented in this report pertain exclusively to data from the first cohort of participants when the children's mean age was three. Data was collected from May to December 2007, either before or soon after the program was implemented.

Two important points come to light from the initial analyses. First, assessing the psychometric properties of the tool used to measure child development helps to nuance interpretation of the results in addition to identify the steps required for monitoring child development. Second, the analysis results served to identify the socio-demographic and linguistic variables whose impact must be considered when carrying out impact and implementation analyses. A discussion on the implications of the results for the impact analyses concludes this reference report.

MEASURING CHILD DEVELOPMENT

Preliminary analyses of the *Early Years Evaluation – Direct Assessment* (EYE-DA) tool show that it has good psychometric properties. Only children's scores on domain E, Awareness and involvement in francophone culture, must be interpreted with caution. The comments and observations made by evaluators and community coordinators clearly indicate that the vast majority of children have trouble understanding the abstract notion of language used to speak or write (e.g., the book is written in French, I speak English with mommy). As this notion is central to domain E, the children's answers have to be substituted by their parents' answers for half of the questions used to measure this domain, thereby increasing the validity of the scores obtained. However, directly measuring this domain for children remains problematic.

Second, the very low scores observed in this initial assessment suggest that the questions are too difficult for children's level of development. The presence of very low scores is not problematic in and of itself, to the extent that further assessments of child development will be conducted, at regular intervals, as the children continue to develop. Nevertheless, it is possible that the impact analyses may not take this initial assessment into account because too many questions were left unanswered on more than one domain. Where appropriate, the results of the

second assessment will serve as baseline measures of child developmental dimensions in future analyses.

Finally, three very important points must be highlighted. First, the EYE-DA is not sensitive enough to detect slight variations in children's language skills. Second, the tool is not designed to assess children older than six years of age. Finally, EYE-DA is designed to measure children's level of school readiness, not to measure important predictors of academic success. To overcome these shortcomings, during the second year of the project children will be assessed using tools that measure predictors of academic success, including children's language skills, which are recognized for their psychometric properties. For example, we will use expressive vocabulary size, which is a very good predictor of academic success (Chiang and Rvachew, 2007). All of the new tools will serve to follow the children's development until their second year of primary school. A report detailing the anticipated tools will be presented to HRSDC during the summer of 2009.

SOCIODEMOGRAPHIC AND LINGUISTIC VARIABLES

For the impact analyses, a series of analyses were conducted to establish the homogeneity of the experimental groups prior to the new program's implementation. The causal inference resulting from a quasi-experimental research design is facilitated by the use of pre-intervention measures of the outcomes (i.e., dimensions of child development) and their associated correlates. These include parents' socio-demographic profile, family processes and community variables.

An analysis of the results of the first assessment highlights that children in the program group had lower scores compared to children in the comparison groups on all domains when the test was administered in French. Additional analyses indicated that children in the program group obtained lower scores in domains influenced by the spoken language, notably domains A (general knowledge, including self and environmental awareness), C (language and communication skills) and E (awareness and involvement in the francophone culture). Results of a second analysis focusing solely on children's mother tongue (entirely francophone versus not entirely francophone, controlling for age and gender), indicated lower scores on all domains assessed, with the exception of motor development, among children who do not have French only as their mother tongue. In this respect, the program group has a larger percentage of children who are not entirely francophone.

Analyses of parent characteristics included in the baseline survey confirmed the homogeneity of the experimental groups for several socio-demographic factors (e.g., parents' level of education), individual factors (e.g., depression), family factors (e.g., parenting styles) and community factors (e.g., level of involvement in francophone culture). The largest differences between experimental groups were found at the linguistic level. A clear orientation towards English was seen in the program group in comparison to the other experimental groups. Moreover, this language difference was significantly more pronounced in the informal daycare comparison group. With regards to the latter, it was noted that a larger proportion of parents in the program group speak English more at home and use English more with their children during literacy activities. Furthermore, the program group reported a lower perception of francophone vitality than the informal daycare group, that is, less widespread use of French in public areas and less ease of access to French-language media. Finally, when children in the program group

were 12 to 36 months old they were more exposed to English day care settings than children in other experimental groups. Taken together, the results suggest that the children in the program group are immersed in a family environment that is significantly more anglophone than children in the informal daycare group. The formal daycare comparison group is half-way between the program group and the informal daycare group.

The paradox between the strong commitment to the francophone culture among parents in the program group and their use of English deserves further consideration. The vast majority of these parents (99%), in fact, consider it to be very important for their children to speak French and develop a francophone identity (90%), even though they reported using English more on a day-to-day basis. This apparent contradiction in the answers of parents in the program group highlights one of the levers targeted by family workshops: raising awareness and informing families about children's language, cultural and identity development (Dionne-Coster and Lafleur-Joly, 2007; workshop 6). Therefore, a series of analyses is planned to determine whether family workshops led parents in the program group, as opposed to those in the comparison groups, to use French more at home and during their interactions with their children.

FUTURE ANALYSES

The key finding derived from the analyses is the need to take into account linguistic variables in order to isolate the impact of the preschool program on children's development from the influence of their language environment. This consideration is especially important since the program group has a relatively more pronounced English-speaking family environment. Regarding the results of the impact analyses, we anticipate that the difference in family language profiles across the Readiness to Learn project experimental groups will cause the positive effects of the new preschool child care program to be underestimated. That is to say that, if families in the program group were as francophone as those in the comparison groups, we could expect to see more substantial positive effects from the new preschool child care program than those anticipated with the current program group. In fact, a greater percentage of exogamous families are found in the program group. This assertion stems from more refined analyses of the Readiness to Learn project sample, which shows a larger percentage of anglophone fathers in the program group compared to the comparison groups. We therefore expect to see a "catch-up effect" where, after exposure to the program, the children in the program group will have language skills equivalent or slightly higher than those in the comparison groups.

A second finding concerns the use of community survey and community mapping results in the impact analyses. These results tell us about the major trends within the community, but not about the variations specific to the user of community services and resources. This makes using the results of the community survey and community mapping less relevant for the impact analyses. Consequently, the impact analyses will focus more on the information provided by the parent surveys. They contain direct measures of the types of resources and services used, the frequency with which they are used, the language in which the activities take place, the reasons underlying their choice and, finally, the barriers to access that are encountered. Certain dimensions of objective vitality (e.g., demographic weight) will be combined with dimensions of subjective vitality as measured by parents (e.g., perceived vitality of the francophone community). This exercise will provide a richer understanding of the dynamic at work in communities where francophone children grow up in a minority francophone environment.

Using a Statistics Canada survey on the francophone minority population, SVOLM, we sought to determine the representativeness of the Readiness to Learn project children in relation to young francophone minorities living in the same geographic regions. We noted that the Readiness to Learn project children are representative of their peers in terms of socio-economic classification, but not in terms of family language profiles. The Readiness to Learn project and SVOLM children have similar family structures, parents have similar levels of education, and they have a similar total family income. On the other hand, comparisons between the mother tongue of Readiness to Learn project and SVOLM mothers, fathers and children indicate that, overall, the former has a stronger francophone profile than the latter. On the contrary, the FOLS comparisons of the Readiness to Learn project and SVOLM mothers and fathers highlight that the former has weaker francophone profile than the latter. Taken together, these findings suggest that there is a different dynamic for intergenerational language transmission between the Readiness to Learn project and SVOLM populations. An essential distinction between the two populations appears to be the greater percentage of immigrants in SVOLM compared to the Readiness to Learn project⁵¹. Consequently, the degree to which the Readiness to Learn project results can be generalized depends on the percentage of newcomers in the francophone minority population using daycare services. If this percentage is relatively low, as appears to be the case for the Readiness to Learn project, there is a higher probability that the results can be reproduced in another francophone minority population. On the other hand, if the percentage of francophone minority immigrants using daycare services is relatively high then there is a lower probability of reproducing the Readiness to Learn project results in another francophone minority population.

⁵¹ Remember that we used mother tongue as the proxy to determine Readiness to Learn project respondents' immigrant status while SVOLM used respondents' country of birth.

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Appendices

Appendix A: Overview of school readiness tests in Canada and choice of the EYE-DA

There currently exists in Canada (and elsewhere) a wide diversity of tests that measure one or more factors of school readiness. Some attempt to measure both cognitive and behavioural aspects as well as general knowledge. Others disregard aspects relating to behaviour or temperament. The manner in which these tests are administered also differs substantially. Some assessments are conducted by observing the child, while others are carried out directly, face-to-face. The person administering the test also varies. While some children are assessed by their teachers, certain tests require training and must be administered by a third person. Owing to the variety of assessment formats and dimensions measured, it is common practice for researchers to use a number of tests, within one and the same study, to assess school readiness.

The literature on school readiness identifies eight criteria that allow us to determine which assessments are good at evaluating this concept (Neisworth and Bagnato, 2004; see also Meisels and Atkins-Burnett, 2006). Therefore, a proper assessment of school readiness:

1. Measures indicators of recognized and socially acceptable development
2. Uses non-intrusive naturalistic methods
3. Is useful for interventions
4. Is fair for diverse children
5. Is sensitive to small differences
6. Examines the convergence of diverse information
7. Is founded on evidence-based findings
8. Includes collaboration with parents and professionals

School readiness tests can have several objectives and the above guidelines are generally applicable to all of them. For the needs of the Readiness to Learn project, the overview of tests will be limited to tests relevant to the issue of research and the conditions in which the project is being carried out. Table A.1 provides a summary of these tests, including the EYE-DA, which will still be described in greater detail in the following section.

Table A.1: Summary of school readiness tests in Canada

<i>Tests and authors</i>	<i>Dimension(s) measured</i>	<i>Target age</i>	<i>Administration</i>	<i>Bilingual</i>
Lollipop-revised edition Chew (1989) French version validated by Venet et al. (2003)	<ul style="list-style-type: none"> • Identification of colours and shapes • Spatial recognition • Recognition of numbers and counting • Recognition of letters and writing 	5 and 6 years	<ul style="list-style-type: none"> • Time: 15 minutes • Assessment by a trained third person • Direct measure 	Yes

<i>Tests and authors</i>	<i>Dimension(s) measured</i>	<i>Target age</i>	<i>Administration</i>	<i>Bilingual</i>
Early Development Instrument Janus and Offord (2007)	<ul style="list-style-type: none"> Physical health and well-being Social competence Emotional maturity Language and cognitive development Communication skills and general knowledge 	4 and 5 years	<ul style="list-style-type: none"> Time: After a few months of interaction with the child Assessment by the teacher or educator Indirect measure 	Yes
Who Am I? Test* Australian Council for Educational Research (ACER) (1997)	<ul style="list-style-type: none"> Copy scale (copies of geometric figures) Symbol scale (name, number, letter, word, sentence) Drawing scale (representation of a person) 	4 to 7 years	<ul style="list-style-type: none"> Time: 7 to 15 minutes Assessment by a trained third person Answer booklet given to child Direct measure 	Yes
Peabody Picture Vocabulary Test (PPVT)* Dunn, Thériault-Whalen and Dunn (1993)	<ul style="list-style-type: none"> Auditory vocabulary 	2½ years to adult age	<ul style="list-style-type: none"> Time: About 15 min. Assessment by a trained third person Direct measure 	Yes
Early Years Evaluation: Direct Assessment (EYE-DA) KSI Research International (2005)	<ul style="list-style-type: none"> Awareness and involvement in francophone culture Language and communication Awareness of self and the environment Cognitive skills Physical/motor (gross and fine motor skills) 	2 years 8 months to 6 years	<ul style="list-style-type: none"> Time: 30-60 minutes Assessment by a trained third person Direct measure 	Yes

*Note: These tests are more a measurement of cognitive development.

The tests presented in the table above are used (except for the EYE-DA) within the framework of studies and surveys such as the National Longitudinal Survey of Children and Youth (NLSCY), the Étude longitudinale du développement des enfants du Québec (ÉLDEQ) and Understanding the Early Years (UEY). With the exception of the EYE-DA, they are all measures on a population level including reference norms, which is to say that the results are not interpretable for individuals.⁵² Janus and Offord (2000) claim that there are numerous advantages of using such measures: besides being able to apply them to all children in a community, these instruments are cheaper and the children tested are not individually labelled. According to the authors, this is often a cause of concern for parents and teachers.

The Lollipop Test is an instrument that uses stimuli that are familiar to children which are independent of their socio-economic status. Administration lasts 15 minutes and the test includes four games. This test has demonstrated excellent psychometric properties and a convergent validity with other measures of school readiness (correlations greater than 0.70) (Lemelin and Boivin, 2007). Using the Lollipop Test in a study with ÉLDEQ data, Lemelin and Boivin demonstrated that the test could predict early academic achievement beyond the contributions of

⁵² Conversely, criterion-referenced tests allow the evaluator to interpret a child's score on the basis of specific standards.

a child's gender and age, receptive vocabulary (the PPVT score was used as a control variable), non-verbal cognitive skills or family socio-economic status.

Lemelin and Boivin drew the same conclusion with the EDI, a measure that differs substantially from the Lollipop Test, by of its content and method of administration. Developed by the Canadian Centre for Studies of Children at Risk at McMaster University and the Hamilton Health Sciences Corporation, this measure of school readiness is relatively complete if one considers the five criteria summarized by Doherty (1997). Unlike the other measures outlined in the table above, the EDI offers a behavioural dimension that includes social competence and emotional maturity. The test has 104 items (an abridged version exists with 94 items) and several sub-domains are included in the domains indicated in the table above. For example, emotional maturity is divided into four sub-sections: prosocial and helping behaviour, hyperactivity and inattention, anxious and fearful behaviour, and aggressive behaviour. Lemelin and Boivin (2007) report that the EDI and the Lollipop Test predict early academic achievement in virtually the same way. However, whereas the EDI assesses a child's capacity to enter a Grade one learning environment, the Lollipop Test does not allow for children to be classified according to whether or not they are ready for school (Janus and Offord, 2007). The ÉLDEQ and UEY both include a measure of the EDI by collecting information from teachers.

The third test listed in the table, "Who Am I?", is a measure of cognitive development. Developed by the Australian Council for Educational Research (ACER) for a research initiative in 1997, this test measures the factors affecting children's development during their first years at school. It is administered in the form of a small booklet that is distributed to children and in which they must perform a series of tasks (copy shapes and symbols and draw a picture of themselves). The test has an internal consistency of 0.91, stable scores over time and uniform scores across different evaluators. The advantages of this test are ease of administration and user-friendliness for young children. In a report by the Government of Canada, the importance of the skills measured by this test was highlighted: "As such, copying and writing skills, in combination with other motor and social determinants of young children's development, remains a strong predictor of future academic success." (Government of Canada, 2007).

The Peabody Picture Vocabulary Test-Revised (PPVT-R), like the "Who Am I?" test, is more a measure of cognitive development than a multi-dimensional test of school readiness, such as the EDI or the Lollipop Test. Nonetheless, the PPVT-R (also used in the NLSCY, ÉLDEQ and UEY) is a test recognized for measuring receptive or auditory vocabulary, i.e., a factor that correlates strongly with future academic achievement. Research shows, in fact, that vocabulary size and other language skills influence a child's capacity to benefit from classroom teaching at the kindergarten and Grade one levels, which is a determining factor in longer-term academic success (Doherty, 1997). The child hears a word spoken out loud by the evaluator and then points to one of the four pictures, the one they believe represents the word spoken. Developed in English by Lloyd and Leota Dunn (University of Hawaii, 1997), it was adapted in French by Claudia M. Thériault of St. Thomas University in Fredericton, N.B. and has been widely used in a number of studies.

Interestingly, the PPVT-R was initially considered an instrument complementary to the EYE-DA for determining the test language for children in the Readiness to Learn project. However, the high correlation (0.65) between the EYE-DA score (in the language and communication domain) and the PPVT-R score made administration of the two tests redundant (Willms, 2007).

Other tests

Many other tests that measure school readiness exist. Unfortunately, many of them were not available in French when this report was prepared. Such was the case for the Brigance Diagnostic Inventory of Early Development-Revised (IED-R) (1991), which resembles the EDI in terms of the dimensions measured and the procedures for administering it. The Developing Skills Checklist (DSC) (1990) was designed to measure the skills normally in place in junior kindergarten and kindergarten (4 years to 6 years 10 months). They are summarized in Table A.2 along with other tests that cover a number of the same developmental domains included in the EYE-DA.

A second category of tests, presented in the table below, measure “phonological awareness,” a factor related to early reading development (Tomblin, 2005) and the understanding of writing systems (Burns, Espinosa and Snow, 2003). One of these tests (widely used in the United States) is the Dynamic Indicators of Basic Early Literacy Skills (DIBELS). Interestingly, the English versions of the EYE-DA and EYE-TA (for completion by teachers) have shown very good convergent validity with this instrument (Willms, 2007). The PALS-preK (Virginia Department of Education) is another assessment instrument. Although these tests do not measure school readiness per se (they are not multi-dimensional), they do measure the skills needed for reading, which are also good predictors of academic success in children: “Children who enter kindergarten with reading and math skills are the most likely to do well later in school” (Duncan et al., 2007).

In Canada, the major surveys such as the NLSCY or ÉLDEQ contain multi-dimensional tests of school readiness alongside various tests of cognitive development, which are not necessarily related to children’s verbal skills. The capacity to perform these cognitive tasks has been shown as potentially related to readiness to learn. In addition to the PPVT-R (which is considered “cognitive task”), the NLSCY and ÉLDEQ each include a number-based activity. The third part of Table A.2 also identifies a number of other cognitive tasks included in the ÉLDEQ (except for the Boehm Test of Basic Concepts-Preschool Version, BTBC-PV). Finally, it should be noted that the K.ABC (Kaufman and Kaufman, 1993, for the French version) and Wechsler Preschool and Primary Scale of Intelligence (WPPSI-R) are hybrid cognitive development tests lying between an intelligence and a knowledge test.

Table A.2: Other tests measuring various aspects of preschool development and school readiness

<i>Tests and authors</i>	<i>Dimension(s) measured</i>	<i>Target age</i>	<i>Administration</i>	<i>Bilingual</i>
General development – Multi-dimensional tests				
Brigance Diagnostic Inventory of Early Development-Revised (IED-R) Albert H. Brigance (1991) Revised version (2004)	<ul style="list-style-type: none"> • Language development (receptive and expressive) • Motor development (gross and fine motor skills) • Academic – Cognitive • Social and emotional development • Autonomy in everyday life 	0 to 7 years	<ul style="list-style-type: none"> • Time: 20-55 min. • General assessment by the teacher • Direct and indirect measure 	No

Tests and authors	Dimension(s) measured	Target age	Administration	Bilingual
Developing Skills Checklist (DSC) McGraw-Hill School Publishing Company (1990)	<ul style="list-style-type: none"> • Mathematic concepts and operations • Language • Memory • Writing • Social and emotional development 	4 years to 6 years 10 months	<ul style="list-style-type: none"> • About one hour • Assessment by the teacher who sets up four stations • Direct and indirect measure • The behavioural component is completed by parents 	No
Literacy				
Dynamic Indicators of Basic Early Literacy Skills (DIBELS) School Psychology Program, College of Education, University of Oregon (2000)	Phonological awareness 3 sub-scales: 1) Ability to identify letters 2) Phonemic segmentation fluency 3) Ability to pronounce syllables	5 years to Grade 3	<ul style="list-style-type: none"> • Time: 5 minutes • Assessment by the teacher • Direct measure 	No
PALS-preK (Phonological Awareness Literacy Screening) Invernizzi et al., Virginia Department of Education (1997)	Phonological awareness: <ul style="list-style-type: none"> • Writing one's name • Knowledge of the alphabet • Writing letters and words • Rhymes • Etc. 	4 years	<ul style="list-style-type: none"> • 20-25 minutes • Assessment by the teacher or educator • Direct measure 	No
Cognitive tasks				
VCR (Visually Cued Recall) Zelazo, Jacques, Burack and Frye (2002)	<ul style="list-style-type: none"> • Assessment of scope of basic memory • Non-verbal cognitive skills 	From preschool	<ul style="list-style-type: none"> • Time indefinite • Direct measure 	Yes
Preschool Embedded Figure Test (PEFT) Suzanne W. Coates (1972)	<ul style="list-style-type: none"> • Measure of cognitive style • Children must identify triangles in a more complex figure 	3 years to 5 years	<ul style="list-style-type: none"> • Time indefinite but each figure is timed • Direct measure 	Yes
Boehm Test of Basic Concepts-Preschool Version (BTBC-PV) Anne E. Boehm (1986)	<ul style="list-style-type: none"> • Directions • Sizes • Spatial relations • Quantities • Time 	3 years to 5 years	<ul style="list-style-type: none"> • 15 minutes • Assessment by the teacher • Direct measure 	No
Wechsler Preschool and Primary Scale of Intelligence (WPPSI-R) David Wechsler (1989)	Non-verbal and verbal cognitive skills: <ul style="list-style-type: none"> • Vocabulary • Verbal comprehension • Object assembly • Reproduction of block models • Picture completion 	2 years 11 months to 7 years 3 months	<ul style="list-style-type: none"> • 75 minutes when completed in full • Certain sub-scales are not timed • Direct measure of IQ • Assessment by a trained third person 	Certain sub-scales can be administered in French
Figural Intersection Task (FIT)	<ul style="list-style-type: none"> • Mental-attentional capacity 	From 5 years	<ul style="list-style-type: none"> • Time indefinite • Direct measure 	Yes

<i>Tests and authors</i>	<i>Dimension(s) measured</i>	<i>Target age</i>	<i>Administration</i>	<i>Bilingual</i>
Pascual-Leone and Baillargeon (1994)				
Kaufman Assessment Battery for Children K.ABC (Kaufman and Kaufman, 1983; 1993 for the French version)	<ul style="list-style-type: none"> • Simultaneous processing scale • Sequential processing scale • Attainment of various “targets” 	2½ years to 6½ years	<ul style="list-style-type: none"> • About 35 minutes • Direct measure of IQ • Assessment by a trained and qualified third person 	Yes

One of the advantages of the above tests is that, for some, they are norm-based and can indicate to parents whether they should seek specialized resources if a problem is detected. *Ages and Stages* (Glascoe and Shapiro, 1999) is a test of this type. It is a parent-completed, 30-item questionnaire designed for children aged 6 months to 5 years and divided into five developmental domains: communication, gross motor skills, fine motor skills, problem-solving and personal-social competence. Like the EYE-DA, it can be completed at regular intervals, for example, at 36, 42, 48 months, etc., and is interpreted by the tool supplier. The *Battelle Development Inventory* (BDI) measures essentially the same domains and was designed to identify “at risk” children and trace a child’s development (National Center for Family Literacy, 2001).

To summarize, the tests that measure a more specific aspect of development have their usefulness and are recognized for adequately measuring school readiness, but they overlook other important aspects that may be affected by a given program. As stated by Lemelin and Boivin (2007) regarding the EDI, the most multi-dimensional measure: “This instrument makes it possible to identify dimensions of school readiness other than cognitive or language skills that may be the objects of preventive interventions.” Of course, there exists a multitude of other tests that are not discussed above but could have easily been included in this section. It should be pointed out that multi-dimensional measures of school readiness are few in comparison with the number of other tests that assess the cognitive aspect of school readiness.

The EYE-DA as a measure of development in the Readiness to Learn project

The *Early Years Evaluation – Direct Assessment* (EYE-DA) is the only tool currently being used within the framework of the Readiness to Learn project to assess the effects of the test program. It was developed by Doug Willms, a researcher based at the University of Fredericton, in New Brunswick. The instrument has established an enviable reputation for its interesting psychometric properties and is currently being used in other research projects elsewhere in Canada, as well as by the New Brunswick Department of Education.

In comparison to the existing instruments, the EYE-DA is a relatively complete measure of school readiness if we consider the dimensions being measured. All of the assessment domains are also found in the EDI and, by referring to Table A.1, we can verify that many of the questions included in the EYE-DA are similar to the questions asked in other tests (e.g., phonological awareness or non-verbal cognitive tasks). The test’s format is not unlike other types of assessments outlined above where best practices were established. For example, distributing

an answer booklet to children for them to write and draw in makes the activity fun (HRDC, 2002). Another example is using test boards with coloured pictures and objects that are attractive for children. SRDC found that children had fun taking the test in general (SRDC, 2007).

Nonetheless, the instrument's five domains do not fully cover the aspects of school readiness described by Doherty (2007), as outlined in Section 1.4.1. Recall that these aspects were: physical health and age-appropriate motor development; emotional well-being and a positive approach to new experiences; age-appropriate social knowledge and competence; age-appropriate language skills; and finally age-appropriate general knowledge and cognitive skills. The EYE-DA fails to consider physical health and emotional well-being, social competence or other behaviours deemed positive for school readiness. Note that these aspects of a child's behaviour and attitudes are generally assessed by either the teacher or parent. We might add that Willms developed a complementary test that adds to the EYE-DA and includes a dimension called "Social Skills, Behaviour and Approaches to Learning," this version can be found in the *Early Years Evaluation: Teacher Assessment* (EYE-TA).

To overcome the lack of information concerning the social and behavioural dimension, the SRDC uses a positive behaviour scale (derived from the NLSCY) that includes sub-scales to measure perseverance in tasks, autonomy and certain prosocial behaviours. This measure is intended to complete the EYE-DA and provide a better assessment of the program's impact.

Limitations of the EYE-DA

In 2007, SRDC carried out a pilot study with 20 children in the Ottawa area (aged 2 years 8 months to 4 years 2 months, with a mean age of 3 years 3 months, including two children aged 2 years 8 months, which is the minimum age required to take the EYE-DA). This study aimed to test young children with a profile similar to those eventually recruited in the Readiness to Learn project, i.e., children from exogamous families able to take the test at home. SRDC also wanted to verify the administration time required for the youngest children to better plan the course of the first wave of assessment. The study results highlighted two problems in particular.⁵³

First, the pilot study results were not very conclusive with respect to the very first step of the protocol (i.e., administration of domain E, measuring *Awareness and involvement in francophone culture*).⁵⁴ Very young children had trouble answering the questions for this domain due to shyness or because the concept of "language spoken" was not clear. Children were asked to name stories, songs and books, when typical three-year-old children can only recognize a few books by their cover. Children in kindergarten are better able to recognize titles (Snow, 2006). Yet, the score obtained in domain E is determinant for the continuation of the protocol. To overcome this problem, SRDC agreed with Mr. Willms in July 2007 to directly ask questions concerning the languages spoken by children to parents during the first wave of assessments, and to use visual supports for the first three questions pertaining to the children's preferences.

Second, a high non-response rate was observed among the youngest children throughout the test. A number of questions require children to answer or name things out loud when, according

⁵³ For more information on the pilot study results, readers can refer to the *Interim Report* and *Final Report on the Early Years Evaluation – Direct Assessment Measurement Instrument*, submitted to HRSDC by SRDC respectively on June 12 and July 17, 2007.

⁵⁴ Domain E includes six questions, three of which refer to children's preferences with regard to books or stories, films and songs. The other three questions refer to the languages most often spoken at home with mommy, daddy and friends.

to Atkins-Burnett (2007), “Young children have a more limited response repertoire – preschool and kindergarten are more apt to show than tell what they know.” Mr. Willms was reassuring that the reliability of the instrument remained unchanged even if the initial assessment had answers missing or very low scores. Consequently, some young participants may simply have an incomplete pre-intervention assessment.

SRDC used the pilot study results and Mr. Willms’ recommendations to anticipate the challenges that would be encountered when administering the test in the field and resolve the problems before the first wave of assessments. As evidenced in Section 3.0, these recommendations were followed and proved useful when administering the tool and analysing the initial results.

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Appendix B: Procedure for administering the EYE-DA (pre-intervention measure)

The evaluators who administered the EYE-DA to children were recruited starting in late summer 2007. SRDC provided evaluators with theoretical and practical training lasting approximately six hours in August, September and, for the community of Orleans, in October. In addition to presenting the test administration protocol, training provided an introduction to the Readiness to Learn project and procedures relating to confidentiality. They signed a contract whereby they agreed to adhere to the administration and confidentiality protocol. The complete steps of the protocol for test administration are as follows:

1. The evaluators call parents to schedule appointments for assessments at home or to notify them when the assessment will be conducted in daycares. The purpose of these calls is also to confirm the child's age in months and the answers to the questions on languages spoken with parents and friends for domain E (*Awareness and involvement in francophone culture*).
2. The evaluators and community coordinator get in touch with the participating daycares to define the schedule and arrange a place in the classroom that is favourable for a good assessment.
3. The evaluator applies the "medical" method, that is, she waits to check that the child is the right one before completing the identifying information on the paper questionnaire.
4. The evaluator addresses the child in his or her mother tongue first, then applies the protocol for determining the test language.
5. The evaluator follows the tool developer's scoring instructions, that is, she rounds the score to the lower whole number for the purpose of conducting a prudent assessment.
6. The evaluator encourages the child, but does not give any hints as to how to answer, unless the protocol indicates to do so.
7. If the child gets tired during the test, the evaluator stops and can start again later at the start of the domain where she left off.
8. At the end of the assessment, the evaluator gives the child a sticker to thank him or her for participating.
9. If the child really does not want to participate, the evaluator must try to assess the child at least one more time (another day).

Point 4 is definitely key to the test, as adherence or failure to adhere to this rule may substantially influence the results. The administration protocol for determining the test language suggested by Mr. Willms (presented on December 8, 2006, and revised in July 2007) is outlined in Table B.1.

Table B.1: Decisional tree for determining the test language

Steps	Protocol
1. Administration of domain E	Administer the six questions for domain E directly <u>to the child, and to the parent for questions E4 to E6</u> , at the start of the test.
2. Decisional tree for determining the test language (domain E)	If the score is greater than 6 on domain E, administer the rest of the EYE-DA in French. If the score is less than or equal to 6 on domain E, assess domain C in French and English.
3. Decisional tree for determining the test language (domain C)	If the score in French for this domain is greater than 14, the rest of the assessment is conducted in French. If the score in French for this domain is less than or equal to 14 and the score in English is less than or equal to 14, the rest of the test is conducted in French also. If the score in domain C is less than or equal to 14 in French, but the score is greater than 14 in English, the rest of the assessment is conducted in English.

Also, there are two starting points for the test depending on the child's age. If the child is less than four years old, the evaluator starts with the first item for the domain. Otherwise she starts further on in the test with the option of going back to the starting point if the child is not ready. This rule is to be fair to children who are on one side or the other of point of separation for groups, but very close in terms of age. For the reference report, only the results of the pre-intervention measure are presented. In this context, all of the children were less than four years of age.

Appendix C: Equivalency of baseline survey, KSI, NLSCY and SVOLM scales

The following tables summarize, for each section of the baseline survey, the scales participants responded in the CCPE baseline survey and their equivalency to the scales proposed by Doug Willms (in terms of dimensions measured, number of items and Cronbach's alpha). The tables also contain information to establish the equivalency of the Readiness to Learn project's scales with the scales from the NLSCY or the SVOLM (in terms of dimensions measured). This information will be used later either to establish the degree of the sample representativeness or to determine where the Readiness to Learn project sample is situated in relation to a national sample.

SECTION II: PARENT-CHILD INTERACTION SCALES

Table C.1: Description and equivalency of scales

<i>Names and coefficients</i>	<i>Equivalent name given by Willms (original questionnaire)</i>	<i>Equivalent name given in NLSCY or SVOLM</i>	<i>Number of items</i> <i>Willms / Readiness to Learn project</i>	<i>Cronbach's alpha</i> <i>Willms pilot study</i>	<i>Cronbach's alpha</i> <i>Readiness to Learn project</i>
Scales					
Family processes					
Positive parenting style	Love and Support	NLSCY: Positive interaction	7/7	0.77	0.62
Authoritative parenting style ⁵⁵	Authoritative	NLSCY: Coherence Rationality Inefficient	9/9	0.78	0.58
Support autonomy	Empowerment	Not applicable	5/5	0.67	0.32
Literacy activities	Engagement	NLSCY: Literacy training Activities SVOLM: Use of television and the Internet by children Individual reading or reading with parents	9/9	0.76	0.63
Languages used scales					
Languages used during literacy activities	Language used in Engagement with Child	SVOLM: Individual reading or reading with parents	9/9	0.94	0.92

⁵⁵ Three items are not found in the NLSCY: aau7, aau8 and aau9.

<i>Names and coefficients</i> <i>Scales</i>	<i>Equivalent name given by Willms (original questionnaire)</i>	<i>Equivalent name given in NLSCY or SVOLM</i>	<i>Number of items</i> <i>Willms / Readiness to Learn project</i>	<i>Cronbach's alpha</i> <i>Willms pilot study</i>	<i>Cronbach's alpha</i> <i>Readiness to Learn project</i>
Language spoken by child at home	<i>Language used at home</i>	SVOLM: Child's use of language at home Linguistic dynamic of the child and their friends	9/9	0.87	0.95

Overall, the psychometric properties of the scales were good. The exception is the support autonomy scale, which exhibits a poor internal consistency of 0.32. Given the magnitude of the measurement error, comparative analyses between the experimental groups were not carried out for this scale. Likewise, this scale will not be used in the impact analyses.

SECTION III: SOCIAL CAPITAL AND SOCIAL SUPPORT

Table C.2: Description and equivalency of scales

<i>Names and coefficients</i> <i>Scales</i>	<i>Equivalent name given by Willms (original questionnaire)</i>	<i>Equivalent name given in NLSCY or SVOLM</i>	<i>Number of items</i> <i>Willms / Readiness to Learn project</i>	<i>Cronbach's alpha</i> <i>Willms pilot study</i>	<i>Cronbach's alpha</i> <i>Readiness to Learn project</i>
Family processes					
Social capital	Neighbourhood social capital	Neighbourhood safety	5/5	0.67	0.80
Social support	PMK social support	Social support	5/5	0.70	0.80
Family functioning	Family Functioning	Family functioning	13/8	0.90	0.82
Depression in the PMK	Depression	Health of adults	--/8	--	0.80

SECTIONS IV AND V: IDENTITY, ENVIRONMENT AND FRANCOPHONIE

Table C.3: Description and equivalency of scales

<i>Names and coefficients</i> <i>Names of Readiness to Learn project scales</i>	<i>Equivalent name given by Willms (original questionnaire)</i>	<i>Number of items</i> <i>Willms / Readiness to Learn project</i>	<i>Cronbach's alpha</i> <i>Willms pilot study</i>	<i>Cronbach's alpha</i> <i>Readiness to Learn project</i>	<i>Comments</i>
Involvement in culture	PMK Identity Engagement	6/6	0.78	0.67	This scale includes five of Willms' original questions and adds a question formerly belonging to the community integration scale.
Sense of belonging to linguistic communities	PMK Identity Engagement	2/1	Not applicable	Not applicable	Willms' two questions were combined into a single question.
Subjective vitality	PMK perception of vitality of French	9/6	Descriptive – not a scale	0.90	This scale includes four of Willms' original questions and adds two questions formerly belonging to the community integration scale.
Presence of French in the community	PMK perception of vitality of French (sub-section)	2/2	--	Not applicable	Only one of Willms' two questions was kept and one question was added.
Community integration	PMK desire for integration	3/0	0.84	--	

The scales comprising Sections IV and V underwent a number of changes to ameliorate their psychometric properties and make them better suited for use in comparative and impact analyses. In this regard, two of Willms' scales were merged to form a single scale called "Involvement in culture." This new scale that combines some of the items presented in the SVOLM. With regard to the perception of francophone vitality, however, it can be seen that the six items chosen proved to have a good measure of internal reliability. Although Willms used the questions more from a descriptive perspective, this measure may present advantages for comparison between the experimental groups.

Appendix D: Administration protocol for baseline survey

The baseline survey was administered by the community coordinator in each of the six communities from May 1 to October 31, 2007. A baseline survey had to be completed for each child/family in the study, regardless of the experimental group to which the child belonged (program group receiving the preschool child care program, formal daycare comparison group and informal daycare comparison group). Before administering the baseline survey, all community coordinators received three days of training to facilitate first contact by telephone and, even more importantly, to ensure that a good initial rapport was established with parents during home visits.

The baseline survey had to be completed by the person most knowledgeable (PMK) about the child (this refers to the parent or responsible adult most knowledgeable about the child, usually because he or she is the one most actively involved in the child's care). In cases where there were several most knowledgeable people who equally cared for the child, we asked them to select one of person to participate in the interview as the primary respondent.

The complete steps of the survey administration protocol were as follows:

- The community coordinator communicated with the parent / responsible person by telephone and scheduled an appointment;
- At the designated time, the community coordinator went to the home of the parent / responsible person and administered the survey (about 50 to 60 minutes duration).

The baseline survey could not be administered until the consent form had been completed and signed. In certain cases, the parents had signed the form prior to the baseline survey appointment; however, in other cases, the community coordinator went to the parent's home, had him or her sign the consent form and then administered the baseline survey.

Appendix E: Compiling scores for domain E

Domain E presents challenges in terms of both test administration and data collection, with these two activities being closely related. This section attempts to clarify how the scores for this domain were calculated and the steps used for arriving at the results in chapter 3:

- Each of the items (E1 to E6) has a rating scale with scores ranging from 0 to 3, where a non-response by children is coded “0”.
- Children with poorly developed language skills obtain lower scores to the questions owing to the codification and do not always understand the concepts of “language spoken”.
- On July 17, 2007, a conference call between SRDC and Doug Willms identified the test’s shortcomings. A decision was made to encourage children to answer questions E1 to E3 with visual aids and to ask them questions E4 to E6 when they are four years old (SRDC, 2007). To compensate for children’s non-response, however, it was further decided that questions E4 to E6 should be asked to parents (when the appointment was made).
- The total score for this domain was calculated in part with the parents’ responses for questions E4 to E6. By calculating this score, evaluators were able to determine whether the decisional tree had to be applied for the test language.
- The total score also makes it possible to calculate the mean score of the scale *towards French*:

$$\text{Mean score} = \frac{E1 + E2 + E3 + E4 (\text{parent}) + E5 (\text{parent}) + E6 (\text{parent})}{18}$$

- For single-parent families (where the father is usually absent), the mean score is calculated without the item referring to the language usually spoken with the father (i.e., E5) in order not to penalize the child.
- Two cases exist where an additional step was needed before calculating the score:
 1. Trilingual families: Domain E does not have a scoring option for families that speak a third language or another language in addition to one of the official languages.
 2. Families speaking French and English equally: Once again, the rating scale makes no provision for this response.

An email from Mr. Willms dated August 27, 2007 helped to establish, a clear procedure used to attribute a score to these items that are a realistic reflection of children’s language environment. The baseline survey includes four questions (questions 49 to 52) allowing for an equivalency with questions E4 to E6. In fact, this simply involve recoding the survey answers with the coherent scale used for domain E.

For example, if the mother's answer to question E4 is "French and Spanish", it is substituted with what the PMK gave as an answer to question 42 ("Which language(s) ... does he/she use to speak to you?") or 43 ("Which language(s) ... does he/she use to speak to < his/her mother/father> or to your <spouse>?").

This choice of answer corresponds in the survey to "French and another language" and can be attributed with a score of 1.5 out of 3 for the scale towards French and 0 out of 3 for the scale towards English (which was not used for the analyses).

Appendix F: Creation of community maps

Community mapping was used successfully in the federal initiative “Understanding the Early Years” and the provincial (Ontario) initiative “Success By 6” projects aimed at deepening the knowledge of how community factors impact the development of young children. In those projects, mapping was used to link the degree of children’s readiness for school with the availability of resources and services in the community. In the past decade, community mapping has become a key tool for service and resource providers because it provides them with information essential to the process of planning and delivering community services and resources to better meet the needs of young children and their families.

In concrete terms, community mapping presents the links between a variety of factors by situating them within a community. It is comprised of several “layers” of superimposed information, with each layer added by means of computer applications such as ArcGIS and MapInfo. The first layer in mapping consists in the geographical representation of the region under study in the form of geographic units such as neighbourhoods or census tracts. Each of the superimposed layers is a visual representation of how a variable of interest is distributed, for example, the percentage of low-income households or crime rate. A layer can also locate the resources and services available in a community. These resources and services are linked to a geographic identifier (for example, postal code, coordinates of longitude and latitude) that serves to locate them in the community.

This document details the preparatory steps for the creation of these community maps and the decisions made to maximize the maps’ usefulness and relevance for answering the research question of the Readiness to Learn in Minority Francophone Communities project: *“Does the new two-tier preschool child care program have a significant impact on children’s language skills, francophone cultural identity and school readiness beyond the development that would otherwise take place in the absence of this program and independently of other external factors that may come into play?”*

Step 1 – Selecting standard geographic units

Each of the six communities in the study have very different surface areas and population sizes, thereby presenting a considerable challenge in the selection of a standard geographic unit.⁵⁶

In order to present geographic maps for six communities on the same scale, a standard geographic unit, which would have a sufficient number of divisions in each of the communities, had to be identified so that a comparative analysis of the geographic units could be made without presenting readers with too great a number of divisions. Knowing the population and surface area of our communities in advance, two geographic units were explored: the census tract and the dissemination area. Census tract defines a small, relatively stable area that usually has a population of 2,500 to 8,000. These regions are located in a large urban centre with a core population of 50,000 or more (Statistics Canada, 2006). A dissemination area is a small area

⁵⁶ Administrative areas legislated by federal or provincial laws or statistical areas created by Statistics Canada to support the collection and dissemination of data. Used by Statistics Canada for analysing and disseminating data (Statistics Canada, 2006).

composed of one or more neighbouring blocks, with a population of 400 to 700 (Statistics Canada, 2006).

Dividing the maps into **census tracts** allows the community factors for five of our six communities to be visualized easily with the exception of Durham. The latter is made up of a number of townships, cities and municipalities, a few of which, like Scugog and Brock, do not have any 2006 census data per census tract. Statistical data are therefore unavailable for these regions and the result is a “blank space” on the map of Durham.

At a lower level in the hierarchy of geographic units used by Statistics Canada, **dissemination areas** produce a finer division of communities. It follows that for less populated regions such as Scugog and Brock, it is possible to obtain census data. However, the use of a smaller geographic unit produces too many dissemination areas to be able to examine the entirety of certain communities on one map. This is the case, for example, with the communities of Edmonton, Saint John and Orleans, and regions in Durham other than Scugog and Brock.

The use of two types of geographic unit is therefore necessary so as not to lose a section of the community under study nor have too many dissemination areas on a single geographic map.

Step 2 – Sample size and respect of Readiness to Learn project participants’ anonymity

A second constraint concerns the guarantee of participants’ anonymity. One of the basic objectives of community mapping is to locate young families in relation to community resources and services for young children aged 0 to 6 years old. The vast majority of community maps that are published have large samples in the region under study,⁵⁷ thereby enabling the number of participants living in a particular geographic unit to be represented by means of symbols. This is not necessarily possible for the Readiness to Learn project sample. Certain communities have so few participants living in the same geographic unit that it becomes impossible to introduce the “layer” indicating the location of participants in the community map without revealing their identity.⁵⁸ At the very most, it is possible to identify the geographic units where Readiness to Learn project participants reside without reporting their number.

Step 3 – Identifying available and publishable variables for the geographic unit selected

For the Readiness to Learn project, the use of several highly interesting variables in the form of layers was explored, including the percentage of young francophone children in the general population per dissemination area, EYE-DA results, and buffer zones of francophone services and resources.

Percentage of young francophone children per dissemination area

It is impossible to use the percentages of young francophone children per dissemination area for the communities of Saint John, New Brunswick, Durham, Ontario and Edmonton, Alberta, which are less than 4% francophone. Combining the percentage of Francophones with the

⁵⁷ See Favaro, P., K. Russell and E. Gray (1999). *Community Mapping Study, Dixie Bloor Neighborhoods*, Understanding the Early Years, Peel Region.

⁵⁸ Statistics Canada confidentiality guidelines allow the publication of aggregated results for a minimum of five persons.

number of children aged 0 to 6 years results in cells that are too small to guarantee the anonymity and confidentiality of our participants. The same observation is true with respect to use of the number of children aged 0 to 17 years. However, the “percentage of Francophones” variable is relevant to our research question and, since these data are available without jeopardizing anonymity, it was added as a “layer” on the maps produced for each community.

School readiness – EYE-DA results

The inclusion of EYE-DA results in a community map is impossible for several of reasons, the main one being the impossibility of guaranteeing our participants’ anonymity and confidentiality. Since the dissemination areas are so small, it would be too easy to identify the results for a four-year-old child living in a certain district within the community. The non-representativity of EYE-DA results per geographic unit is a second reason, just as valid as the first, for not crossing these results with another community factor. Unlike the “Understanding the Early Years” and “Success By 6” initiatives, we do not have the EYE-DA results for the entire population of children aged four years old living within a community. Crossing the EYE-DA results with a non-representative sub-sample of the population could lead to erroneous interpretations.

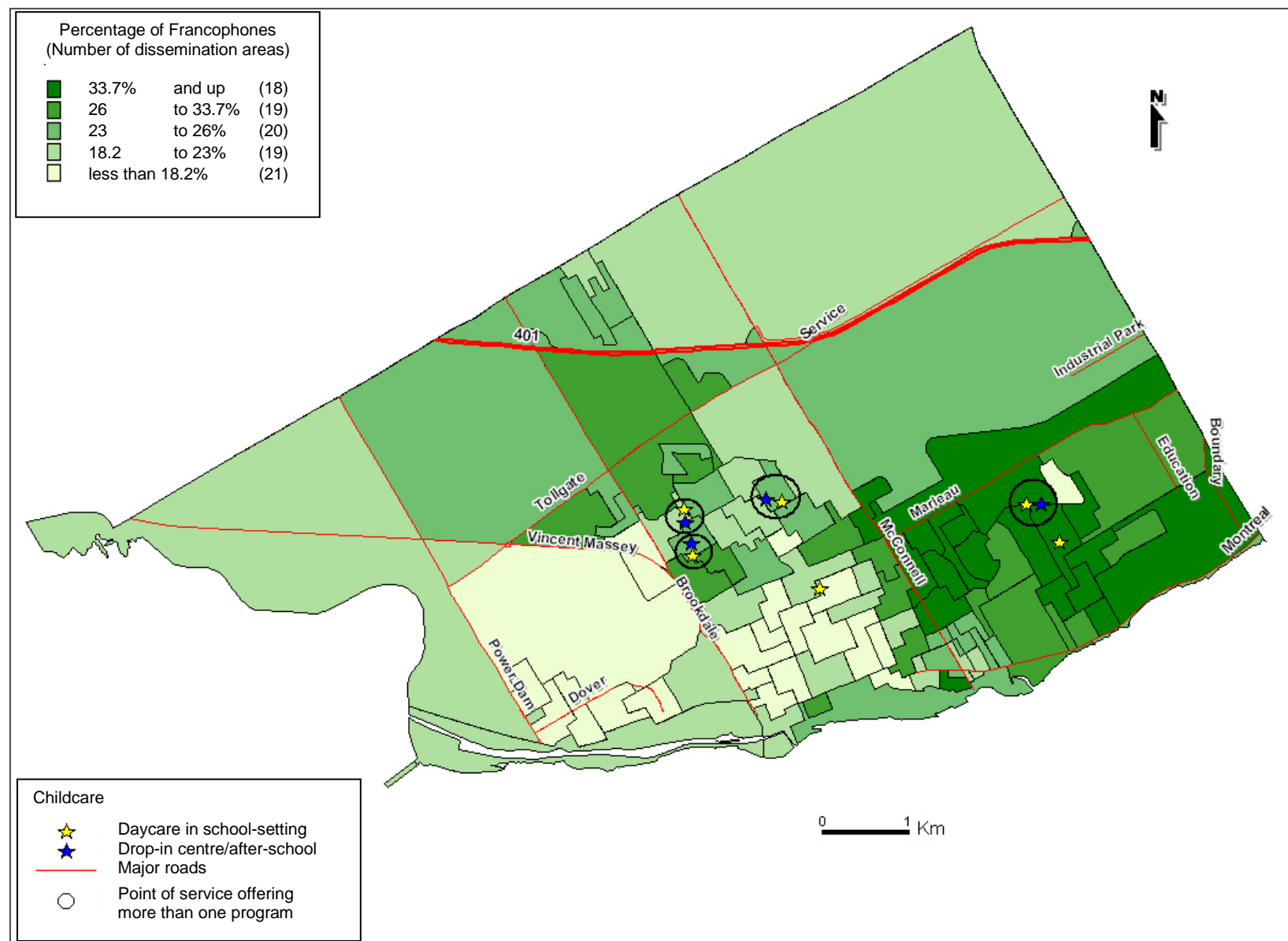
Buffer zone of francophone services and resources

We define a “buffer zone” as an area targeted by a francophone service (e.g., a school) and an area served by a resource (e.g., a library). It is possible to calculate the distance between the home addresses of persons participating in the Readiness to Learn project and the resources/services intended for the Francophones in the community. Using the postal codes of families and services/resources, a calculation can be made to determine the mean distance between a family and a category of services or resources. The mean distance variable does not necessarily reflect the reality in the field, because it does not account for how the services/resources are used by families. Hypothetically, a family living less than two kilometres from a library may not make use of that resource, but go to a library located in another community. For these reasons, we have not included buffer zones in the community maps.

A more reliable measure of the use of services and resources can be obtained directly from users, via parent surveys, who themselves are able to indicate the types of resources and services they use, how often they use them, and the language in which activities take place. A measure of the use of French-language services and resources will be included in the impact analyses in order to isolate the preschool program’s effect on children’s development.

Appendix G: Community maps

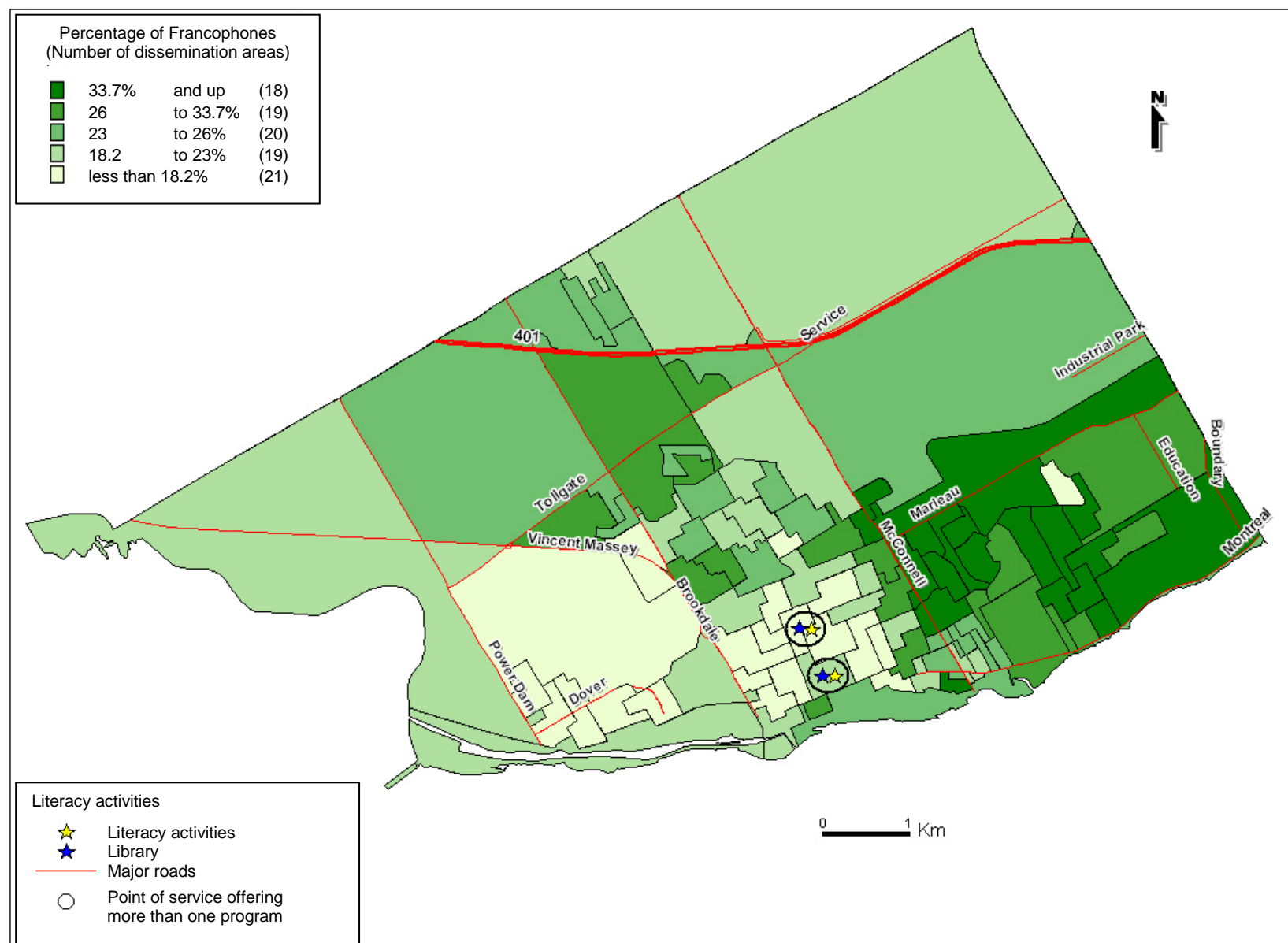
G1.1: Cartography of French-language daycare services offered in Cornwall in relation to the percentage of Francophones by dissemination area, 2006



Source: Statistics Canada, 2006
Software: MapInfo Professional 7.8

Created by: Social Research and Demonstration Corporation
Ottawa, Ontario (Canada)

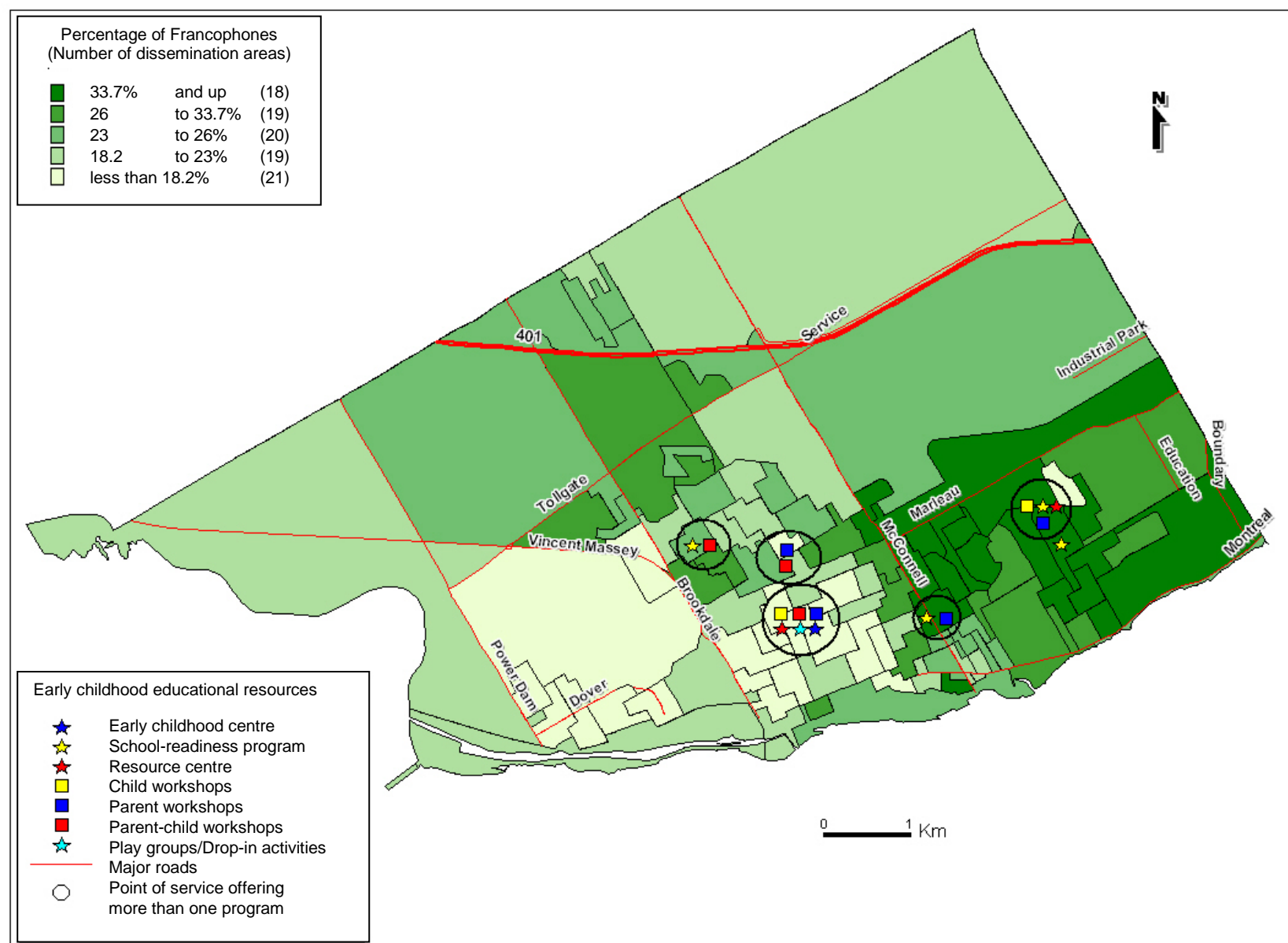
G1.2: Cartography of French-language literacy activities offered in Cornwall in relation to the percentage of Francophones by dissemination area, 2006



Source: Statistics Canada, 2006
Software: MapInfo Professional 7.8

Created by: Social Research and Demonstration Corporation
Ottawa, Ontario (Canada)

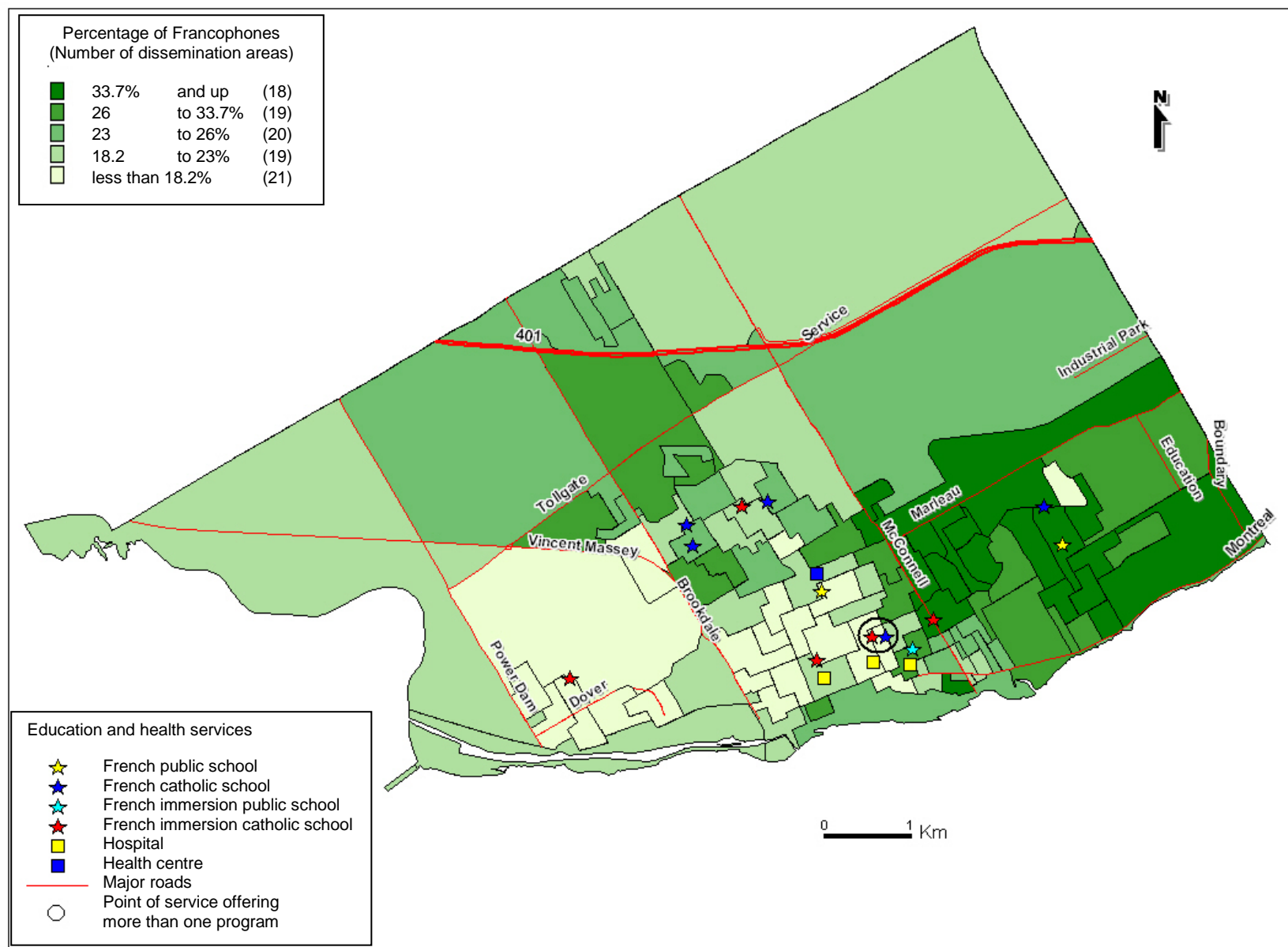
G1.3: Cartography of French-language early childhood educational resources offered in Cornwall in relation to the percentage of Francophones by dissemination area, 2006



Source: Statistics Canada, 2006
Software: MapInfo Professional 7.8

Created by: Social Research and Demonstration Corporation
Ottawa, Ontario (Canada)

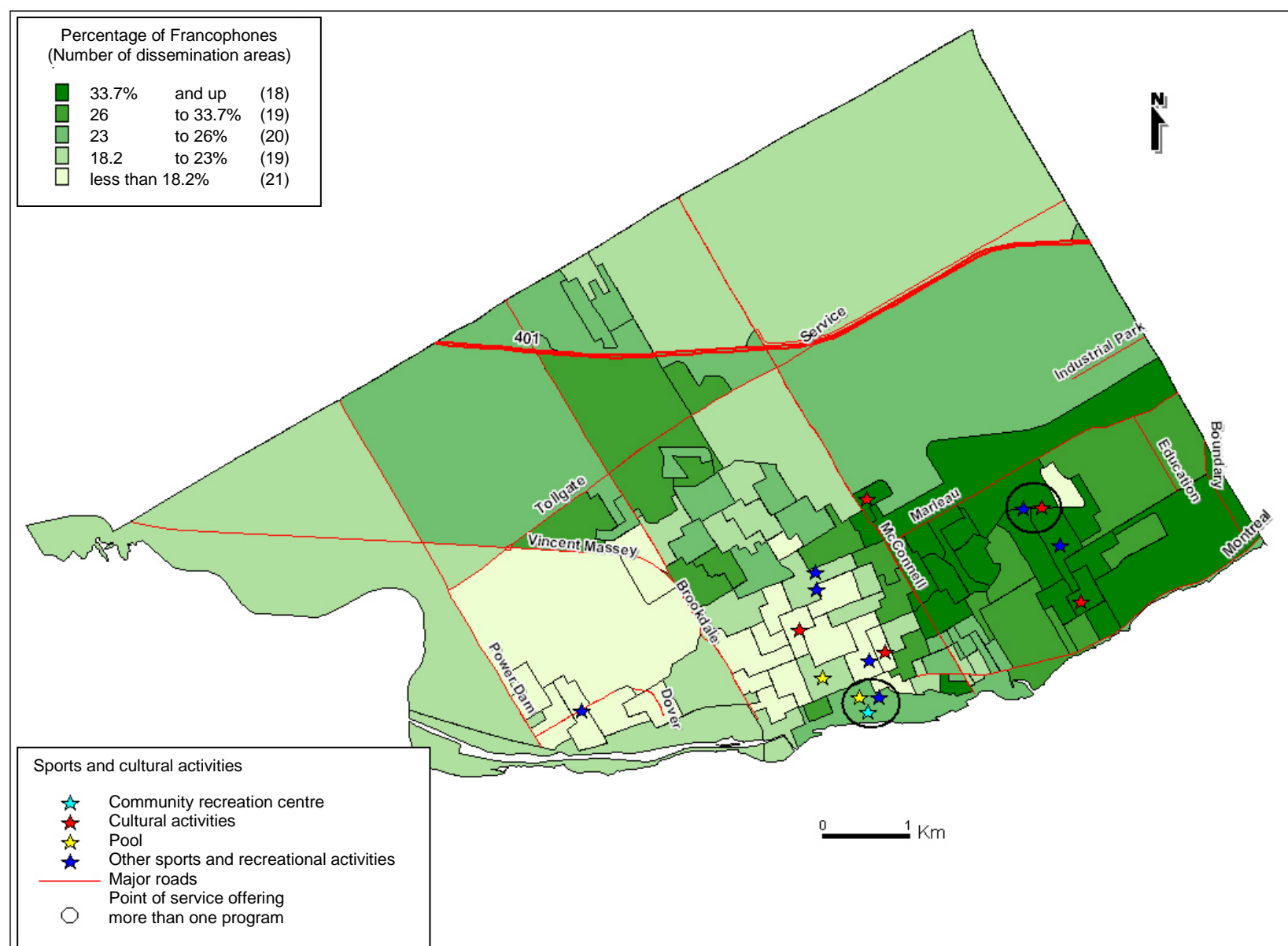
G1.4: Cartography of French-language education and health services offered in Cornwall in relation to the percentage of Francophones by dissemination area, 2006



Source: Statistics Canada, 2006
Software: MapInfo Professional 7.8

Created by: Social Research and Demonstration Corporation
Ottawa, Ontario (Canada)

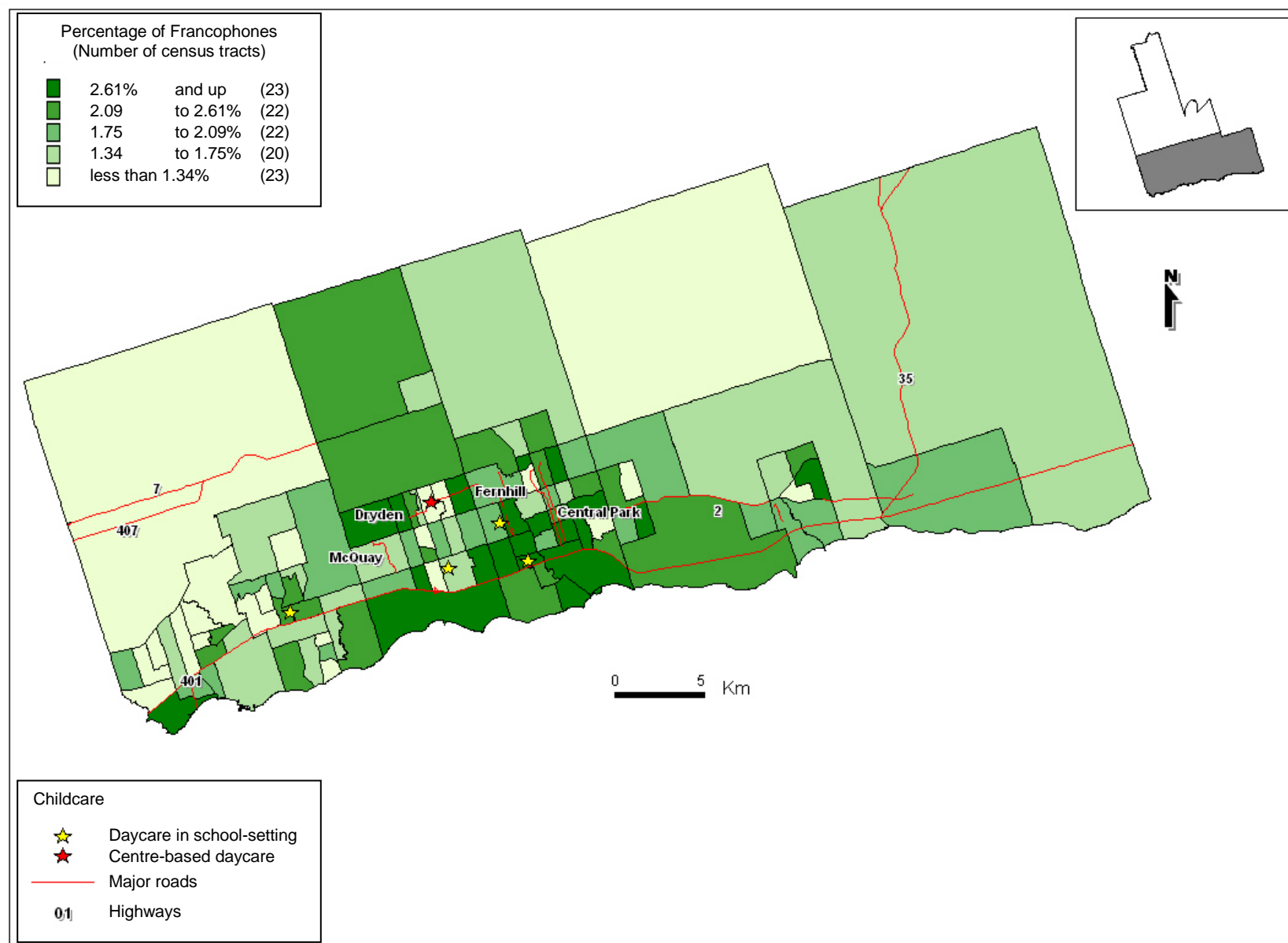
G1.5: Cartography of French-language sports and cultural activities offered in Cornwall in relation to the percentage of Francophones by dissemination area, 2006



Source: Statistics Canada, 2006
Software: MapInfo Professional 7.8

Created by: Social Research and Demonstration Corporation
Ottawa, Ontario (Canada)

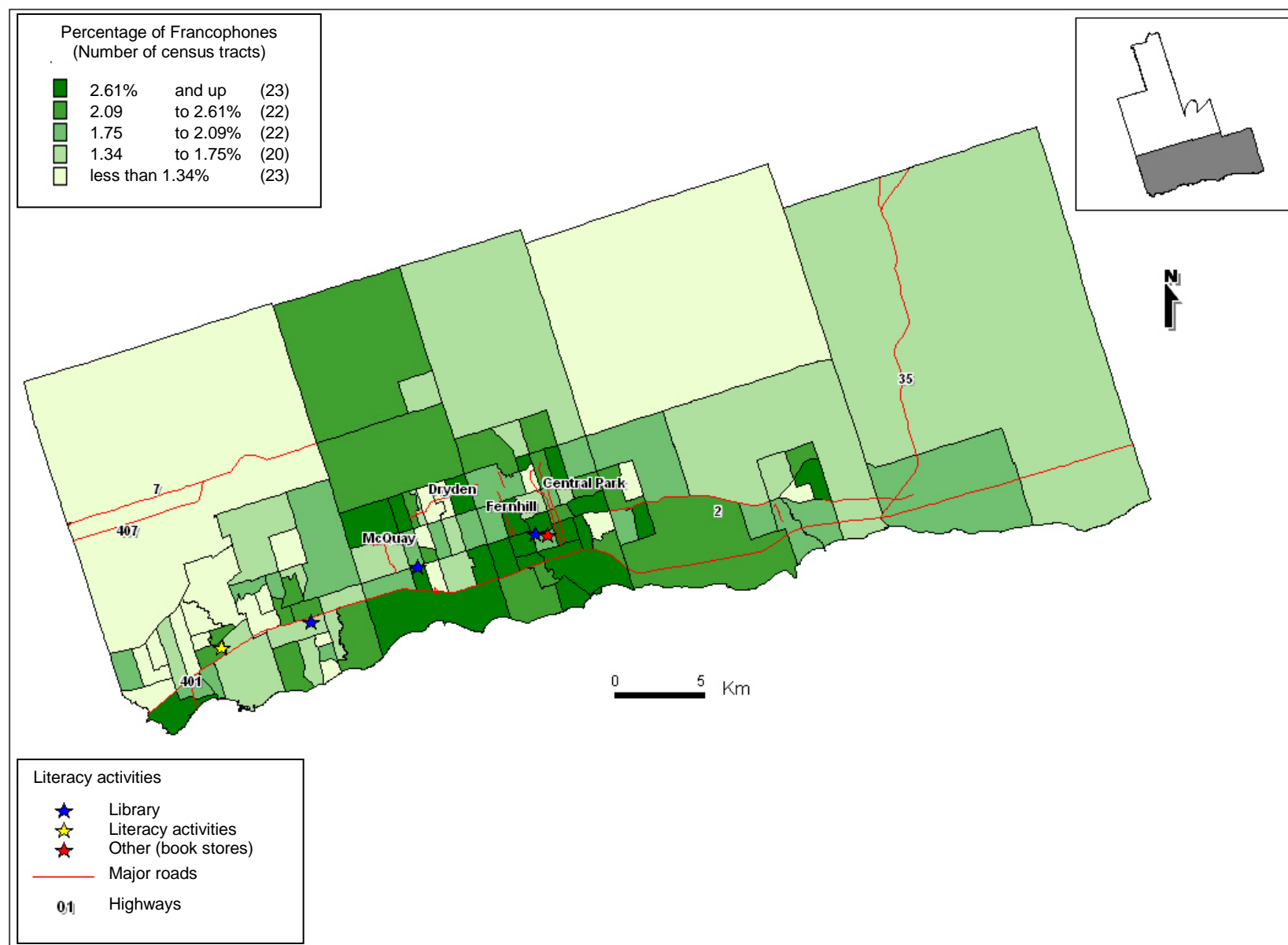
G2.1: Cartography of French-language daycare services offered in Durham-South in relation to the percentage of Francophones per census tract, 2006



Source: Statistics Canada, 2006
Software: MapInfo Professional 7.8

Created by: Social Research and Demonstration Corporation
Ottawa, Ontario (Canada)

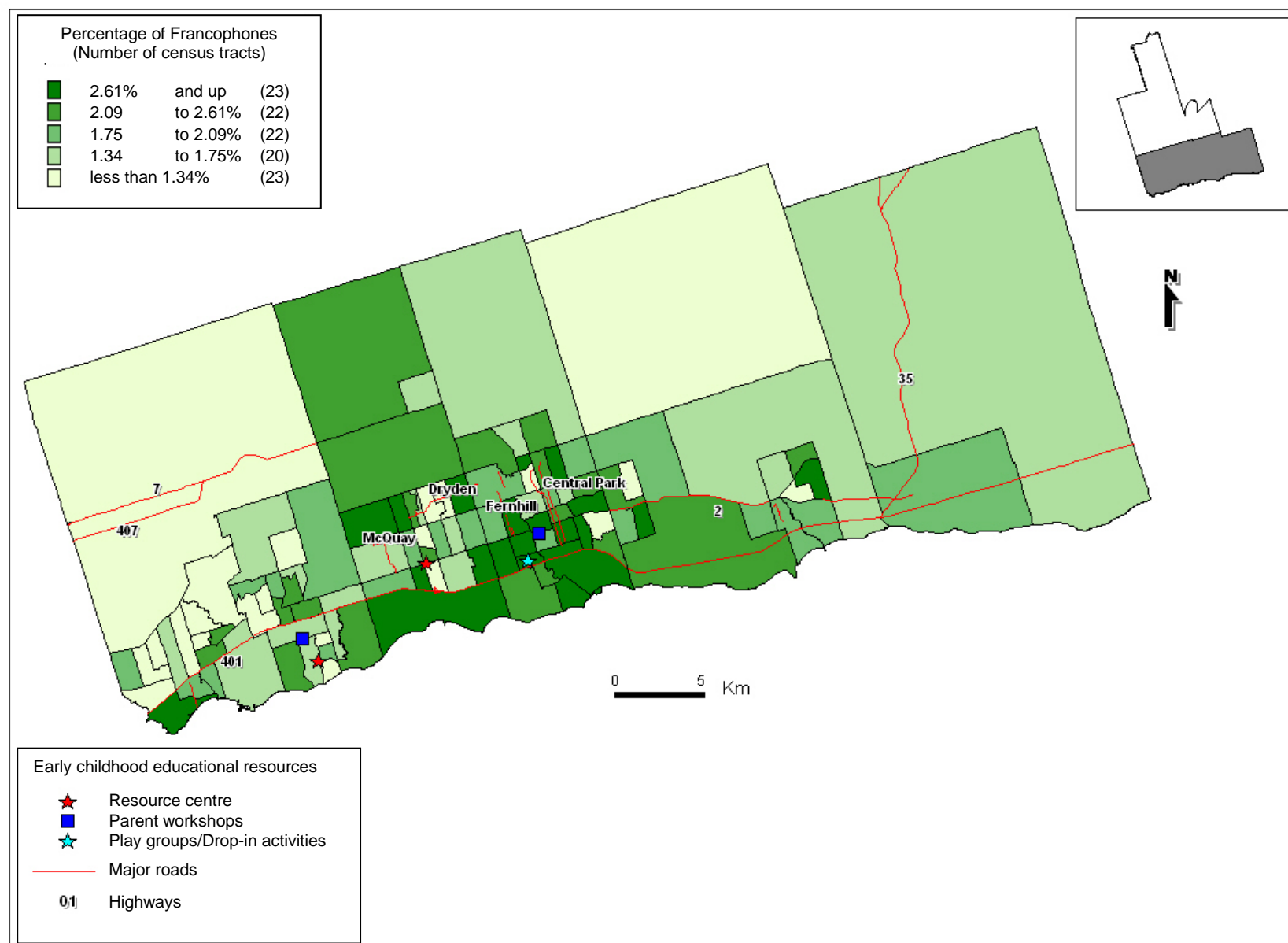
G2.2: Cartography of French-language literacy activities offered in Durham-South in relation to the percentage of Francophones by census tract, 2006



Source: Statistics Canada, 2006
Software: MapInfo Professional 7.8

Created by: Social Research and Demonstration Corporation
Ottawa, Ontario (Canada)

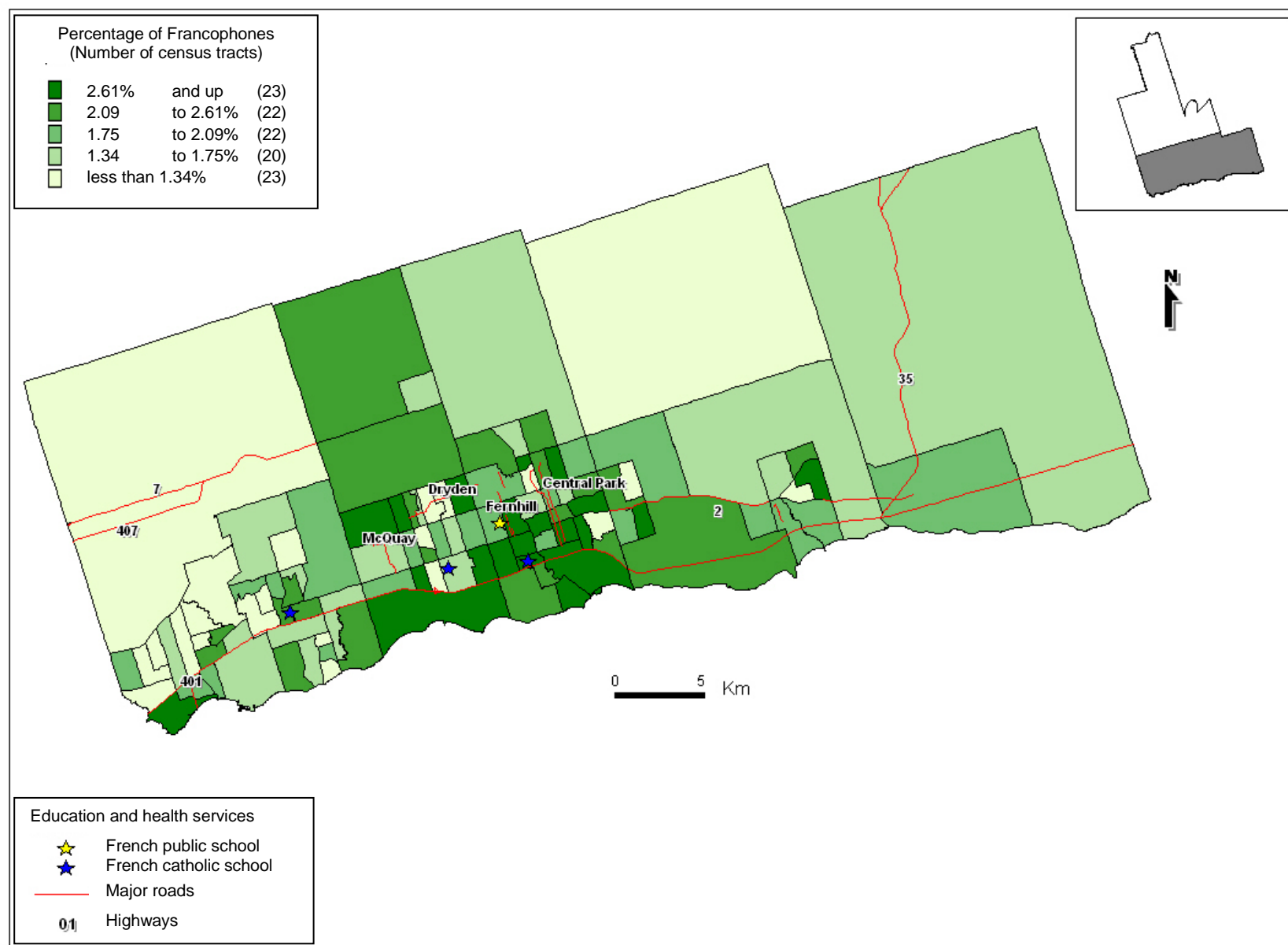
G2.3: Cartography of French-language early childhood educational resources offered in Durham-South in relation to the percentage of Francophones by census tract, 2006



Source: Statistics Canada, 2006
Software: MapInfo Professional 7.8

Created by: Social Research and Demonstration Corporation
Ottawa, Ontario (Canada)

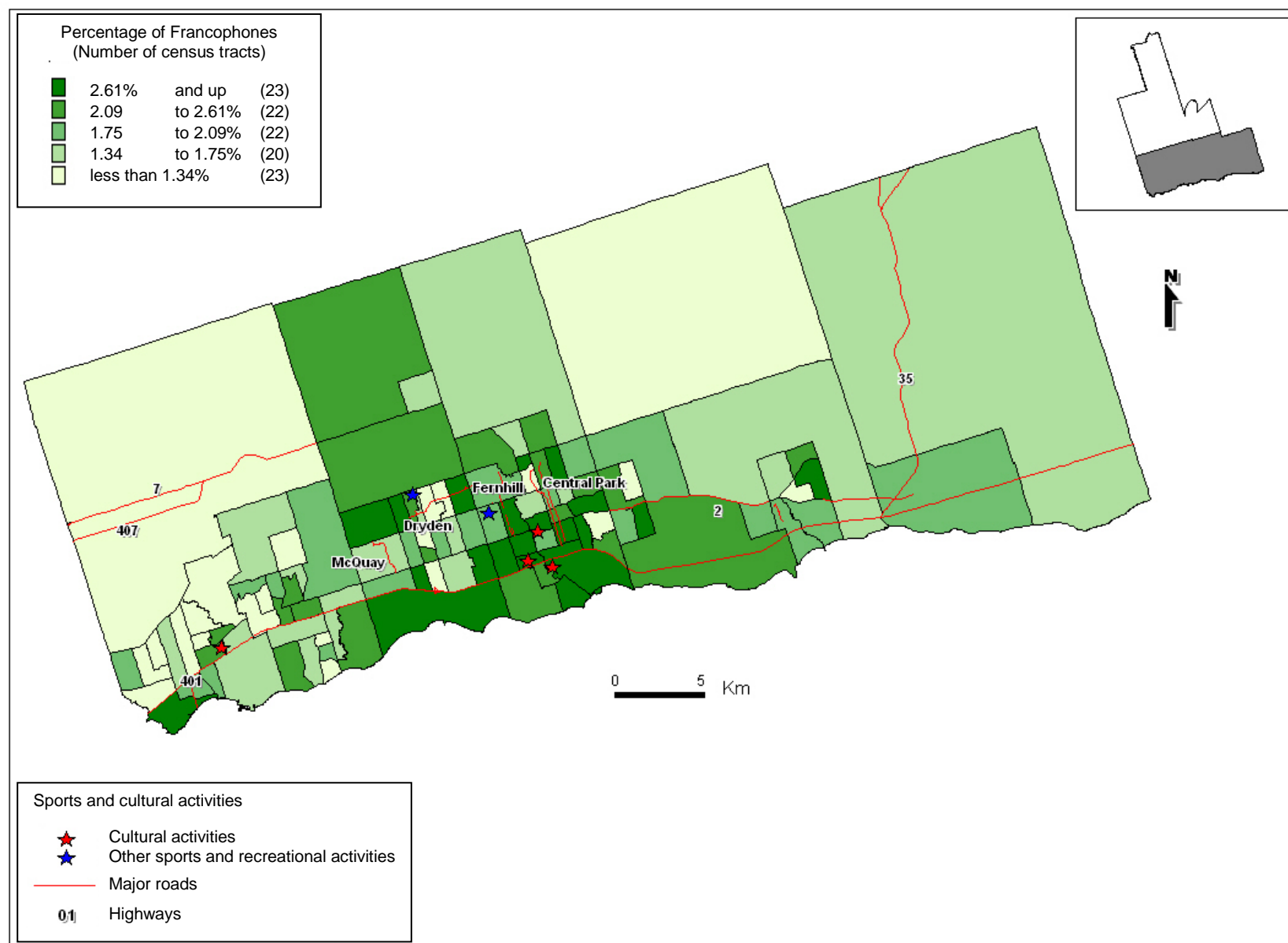
G2.4: Cartography of French-language education and health services offered in Durham-South in relation to the percentage of Francophones by census tract, 2006



Source: Statistics Canada, 2006
Software: MapInfo Professional 7.8

Created by: Social Research and Demonstration Corporation
Ottawa, Ontario (Canada)

G2.5: Cartography of French-language sports and cultural activities offered in Durham-South in relation to the percentage of Francophones by census tract, 2006



Source: Statistics Canada, 2006
Software: MapInfo Professional 7.8

Created by: Social Research and Demonstration Corporation
Ottawa, Ontario (Canada)

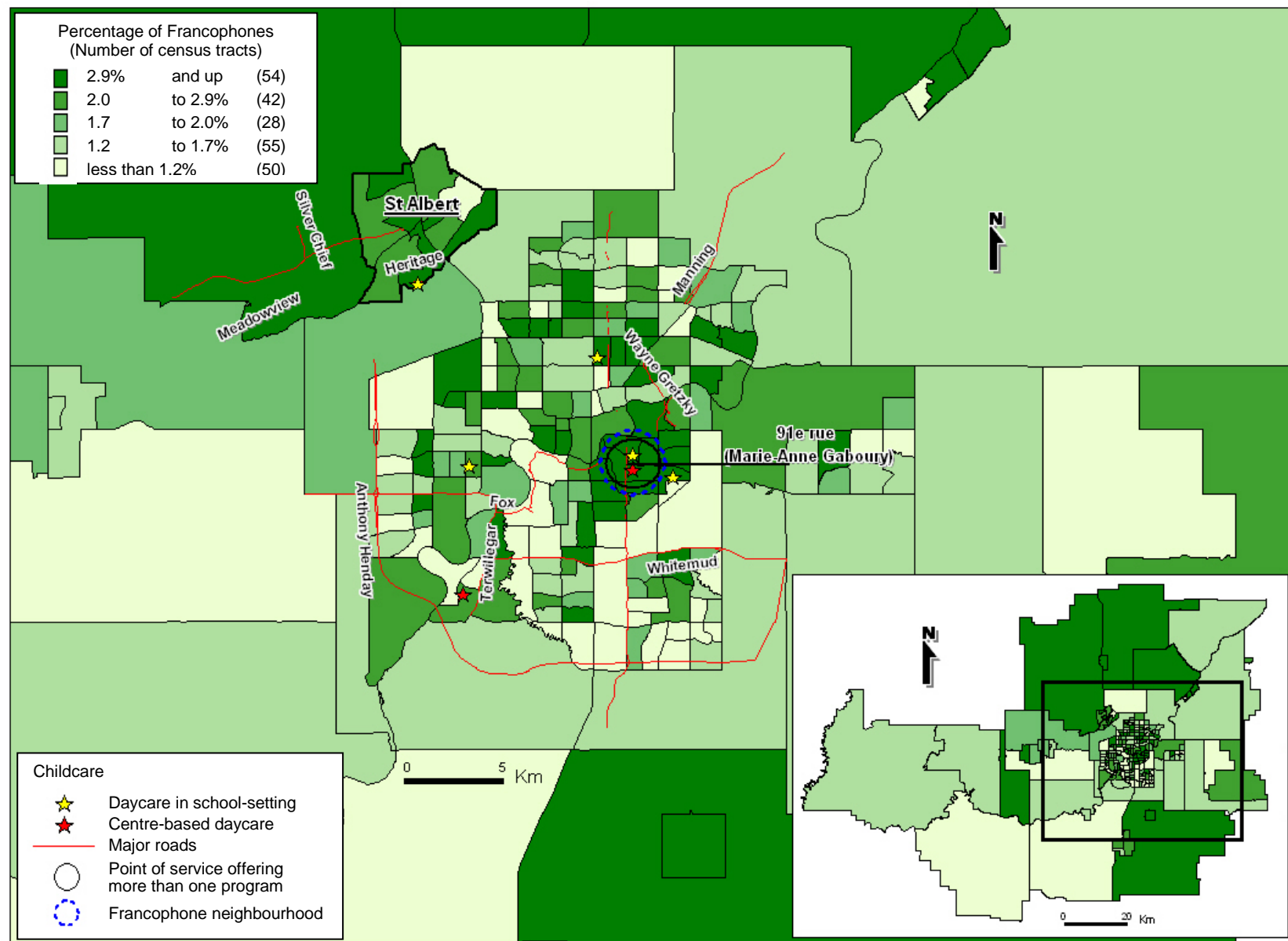
G2.6: Cartography of French-language early childhood resources offered in Durham-North in relation to the percentage of Francophones by dissemination area, 2006



Source: Statistics Canada, 2006
Software: MapInfo Professional 7.8

Created by: Social Research and Demonstration Corporation
Ottawa, Ontario (Canada)

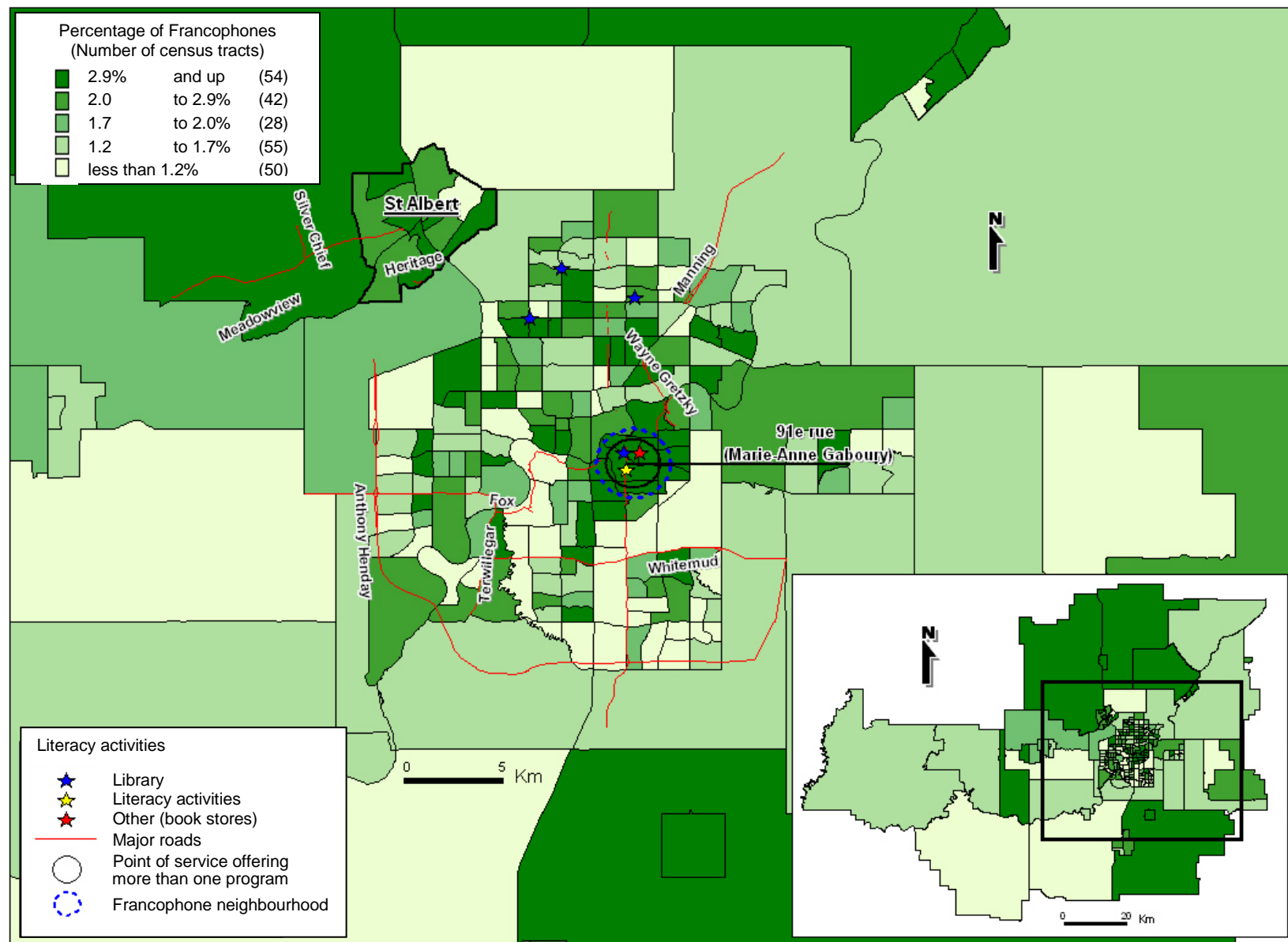
G3.1: Cartography of French-language daycare services offered in Edmonton in relation to the percentage of Francophones per census tract, 2006



Source: Statistics Canada, 2006
Software: MapInfo Professional 7.8

Created by: Social Research and Demonstration Corporation
Ottawa, Ontario (Canada)

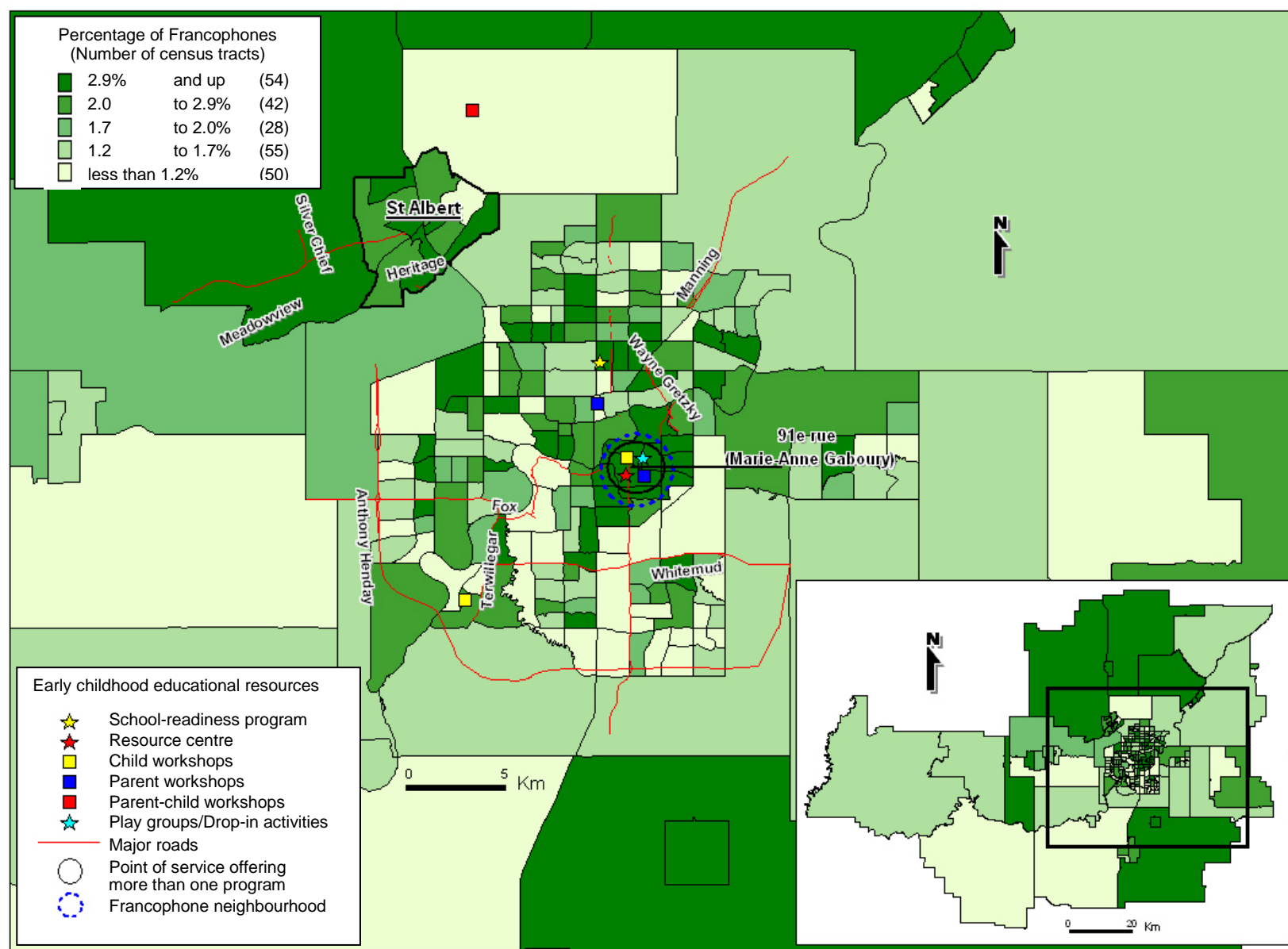
G3.2: Cartography of French-language literacy activities offered in Edmonton in relation to the percentage of Francophones by census tract, 2006



Source: Statistics Canada, 2006
Software: MapInfo Professional 7.8

Created by: Social Research and Demonstration Corporation
Ottawa, Ontario (Canada)

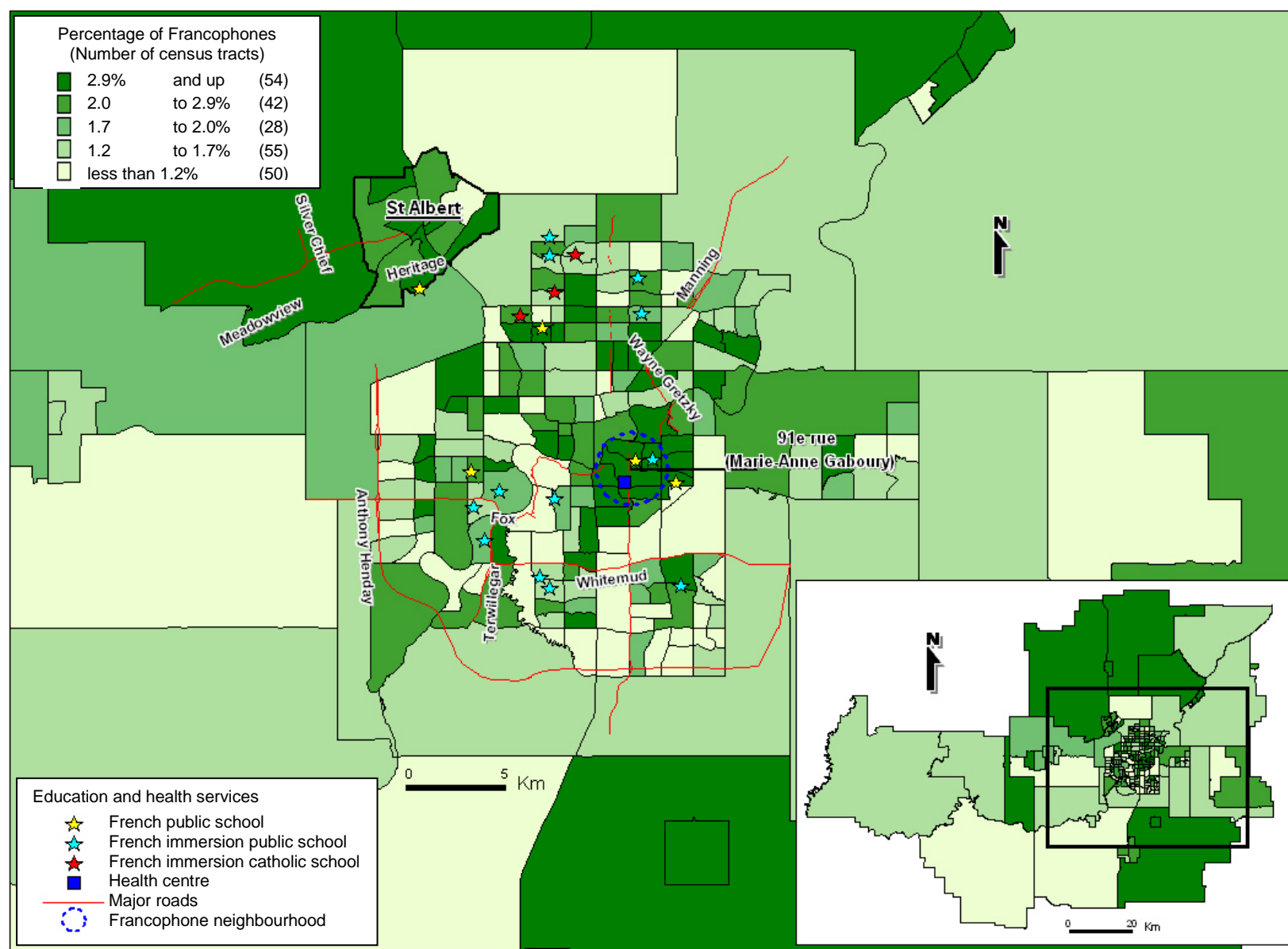
G3.3: Cartography of French-language early childhood educational resources offered in Edmonton in relation to the percentage of Francophones by census tract, 2006



Source: Statistics Canada, 2006
Software: MapInfo Professional 7.8

Created by: Social Research and Demonstration Corporation
Ottawa, Ontario (Canada)

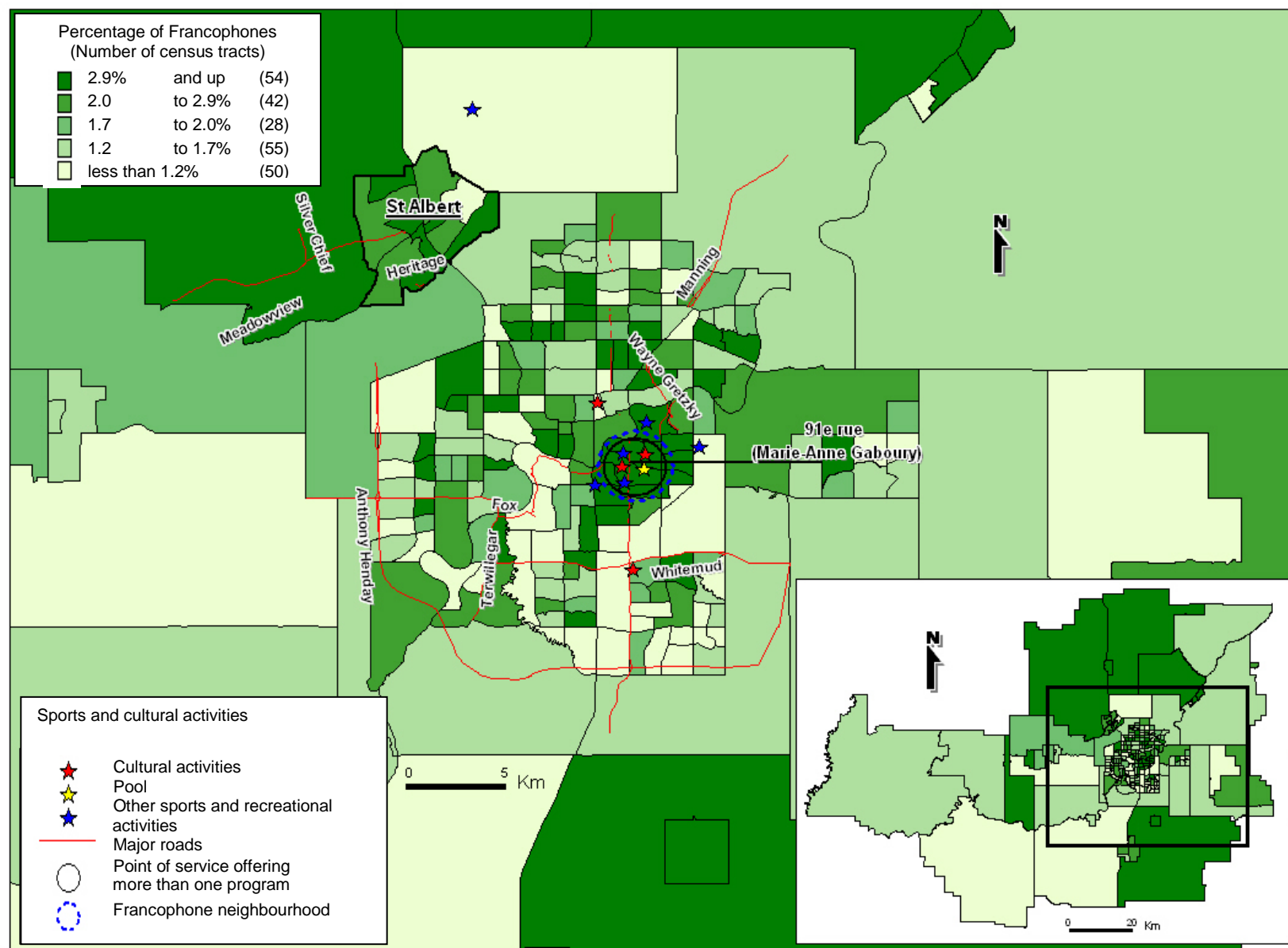
G3.4: Cartography of French-language education and health services offered in Edmonton in relation to the percentage of Francophones by census tract, 2006



Source: Statistics Canada, 2006
Software: MapInfo Professional 7.8

Created by: Social Research and Demonstration Corporation
Ottawa, Ontario (Canada)

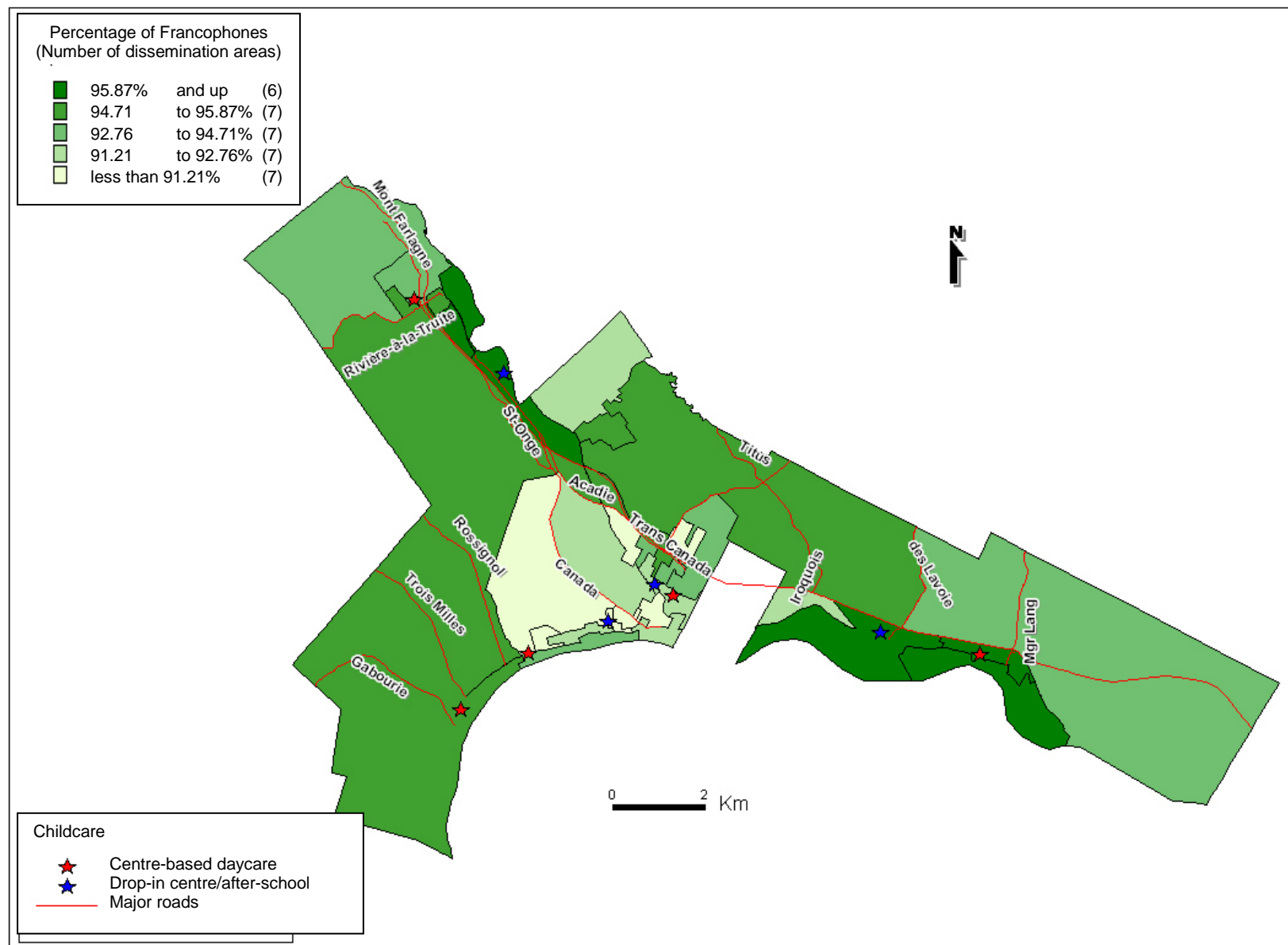
G3.5: Cartography of French-language sports and cultural activities offered in Edmonton in relation to the percentage of Francophones by census tract, 2006



Source: Statistics Canada, 2006
Software: MapInfo Professional 7.8

Created by: Social Research and Demonstration Corporation
Ottawa, Ontario (Canada)

G4.1: Cartography of French-language daycare services offered in Edmundston in relation to the percentage of Francophones by dissemination area, 2006



Source: Statistics Canada, 2006
Software: MapInfo Professional 7.8

Created by: Social Research and Demonstration Corporation
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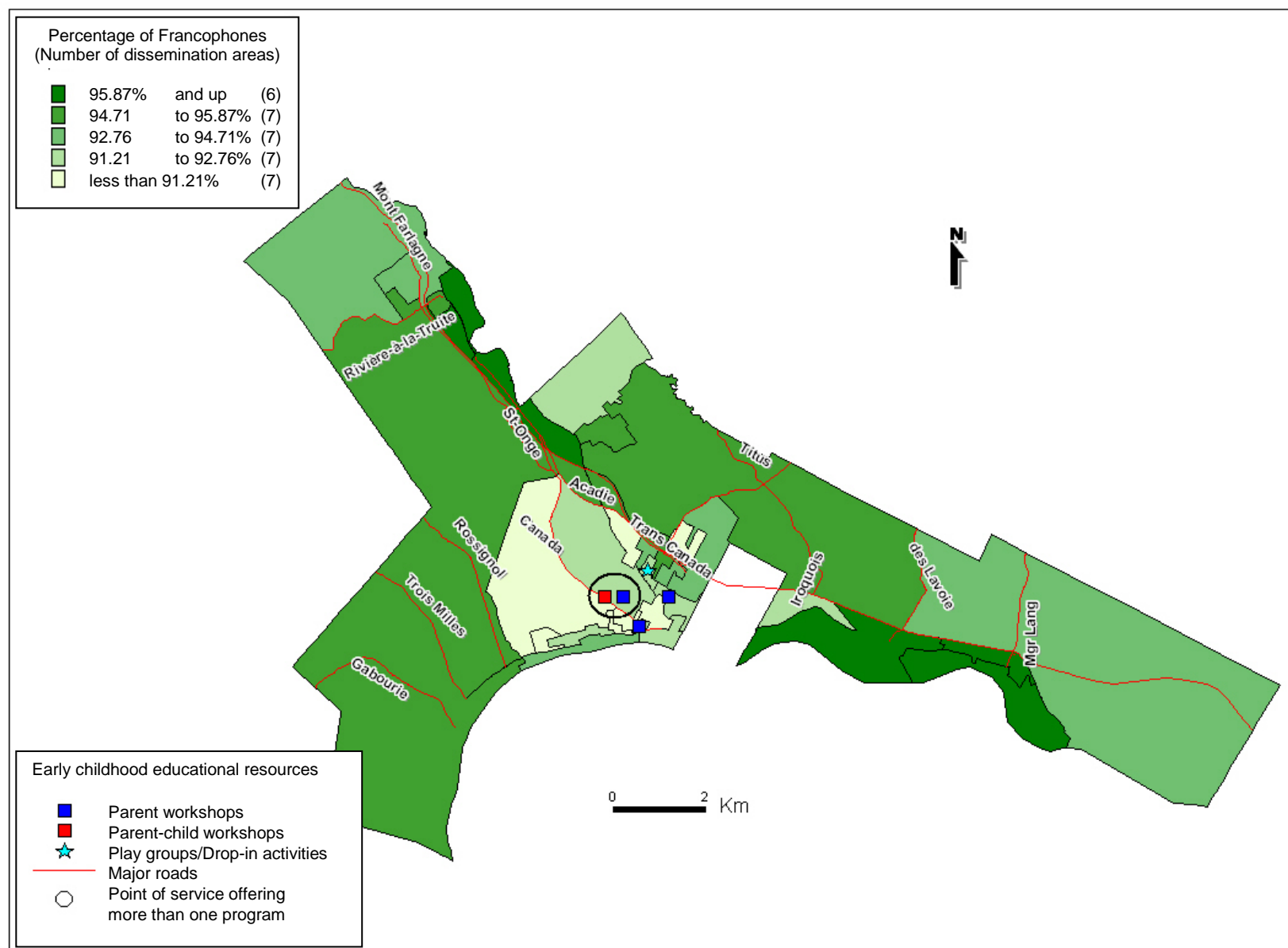
G4.2: Cartography of French-language literacy activities offered in Edmundston in relation to the percentage of Francophones by dissemination area, 2006



Source: Statistics Canada, 2006
Software: MapInfo Professional 7.8

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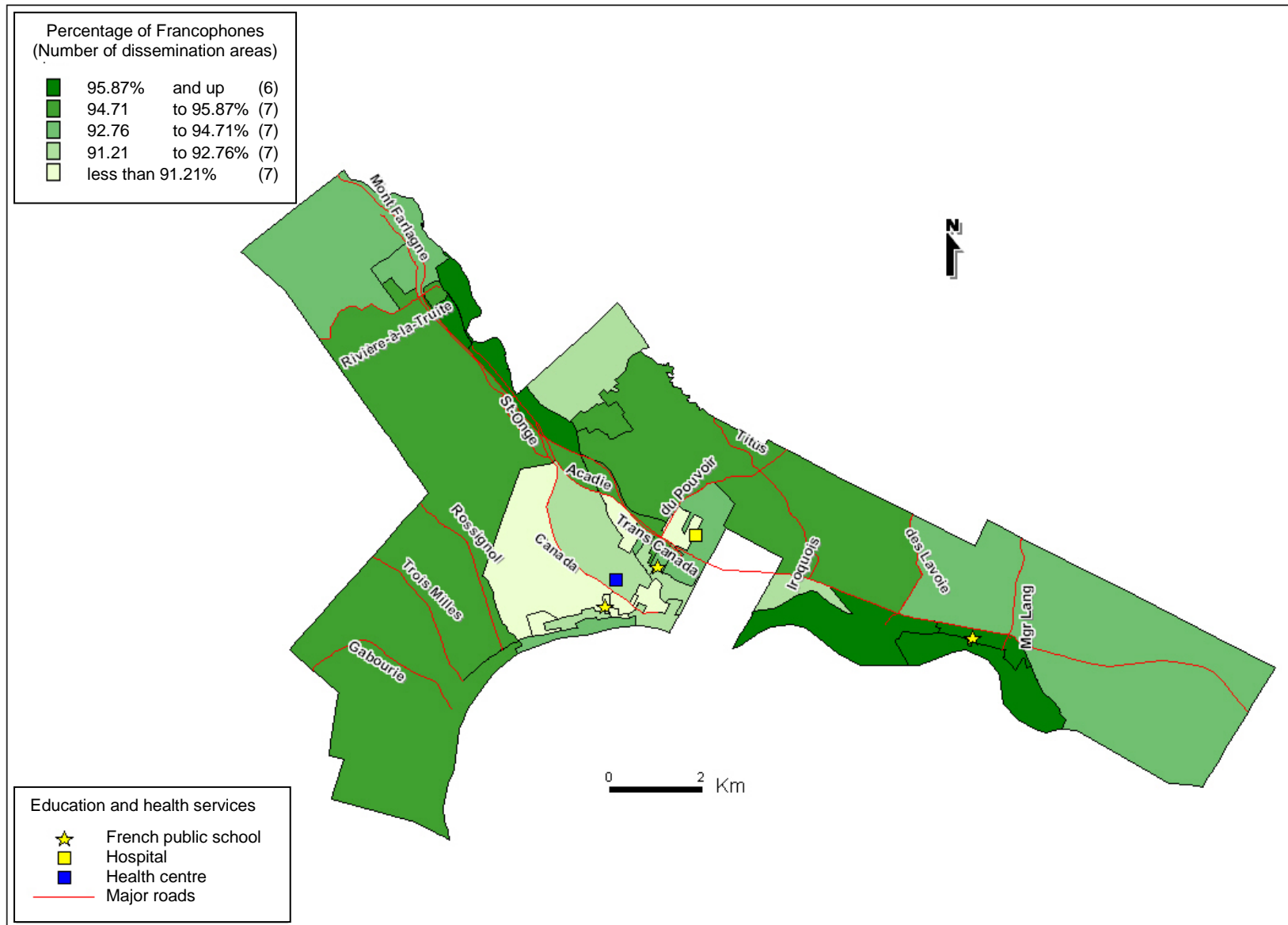
G4.3: Cartography of French-language early childhood educational resources offered in Edmundston in relation to the percentage of Francophones by dissemination area, 2006



Source: Statistics Canada, 2006
Software: MapInfo Professional 7.8

Created by: Social Research and Demonstration Corporation
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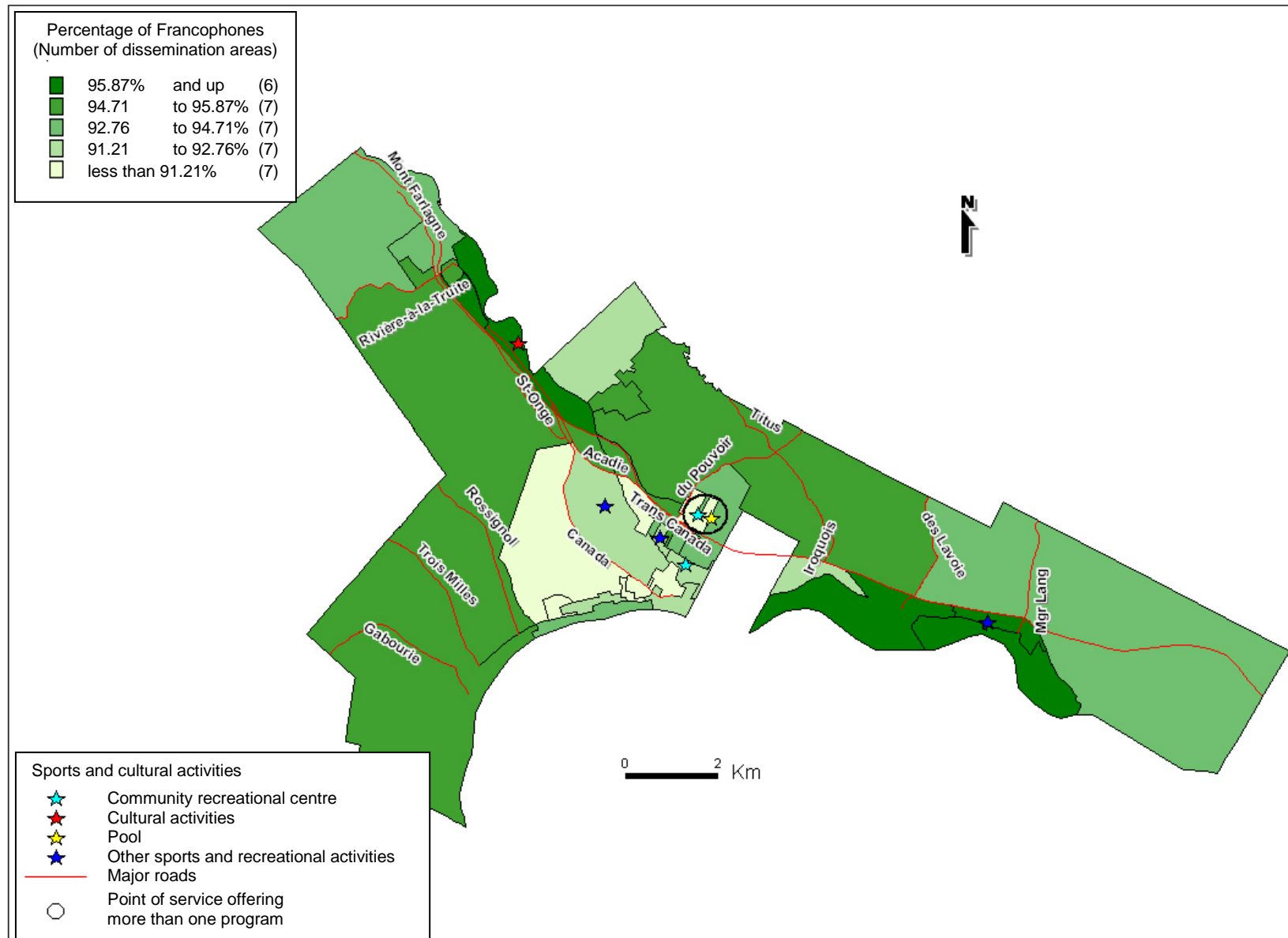
G4.4: Cartography of French-language education and health services offered in Edmundston in relation to the percentage of Francophones by dissemination area, 2006



Source: Statistics Canada, 2006
Software: MapInfo Professional 7.8

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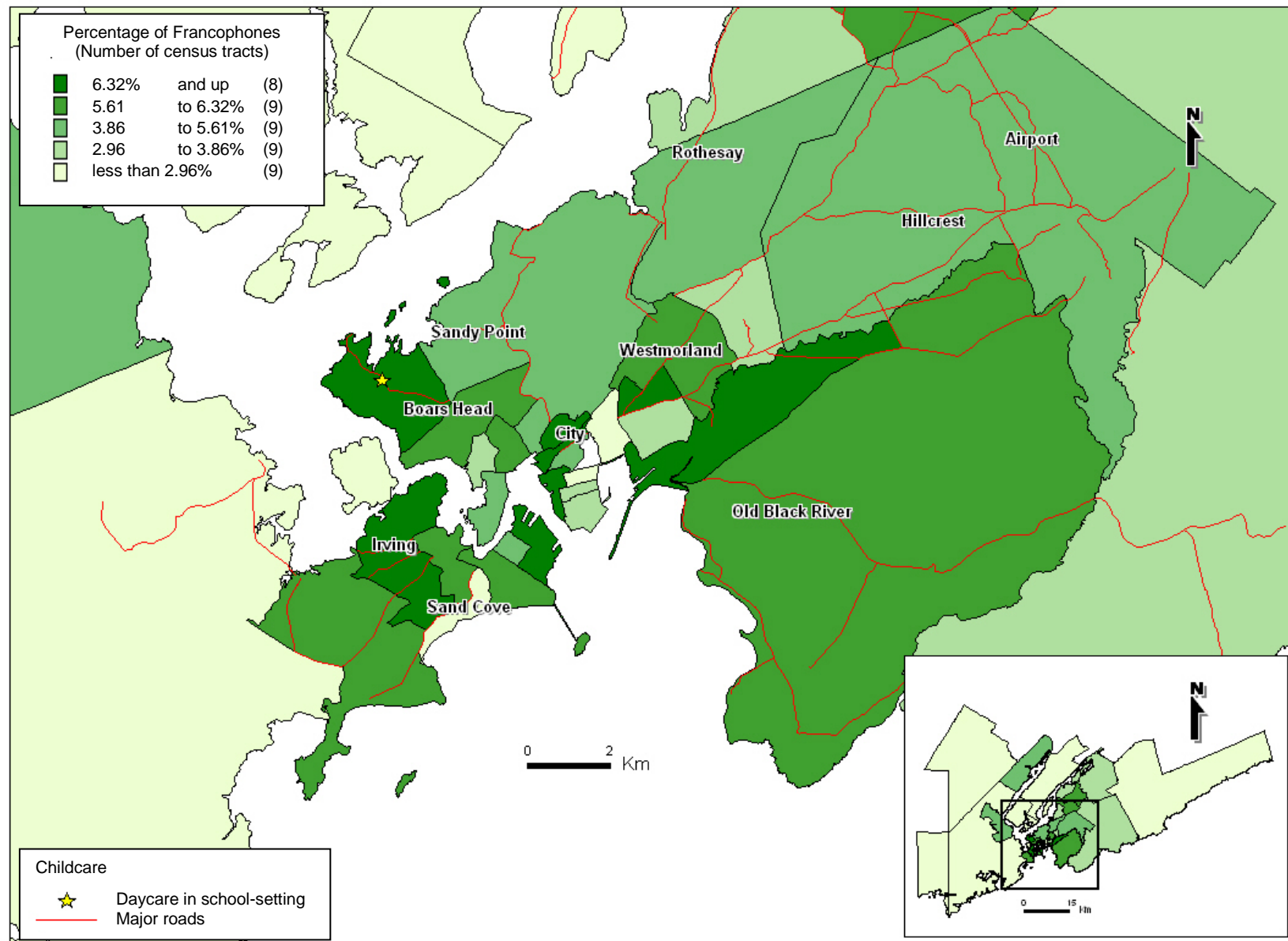
G4.5: Cartography of French-language sports and cultural activities offered in Edmundston in relation to the percentage of Francophones by dissemination area, 2006



Source: Statistics Canada, 2006
Software: MapInfo Professional 7.8

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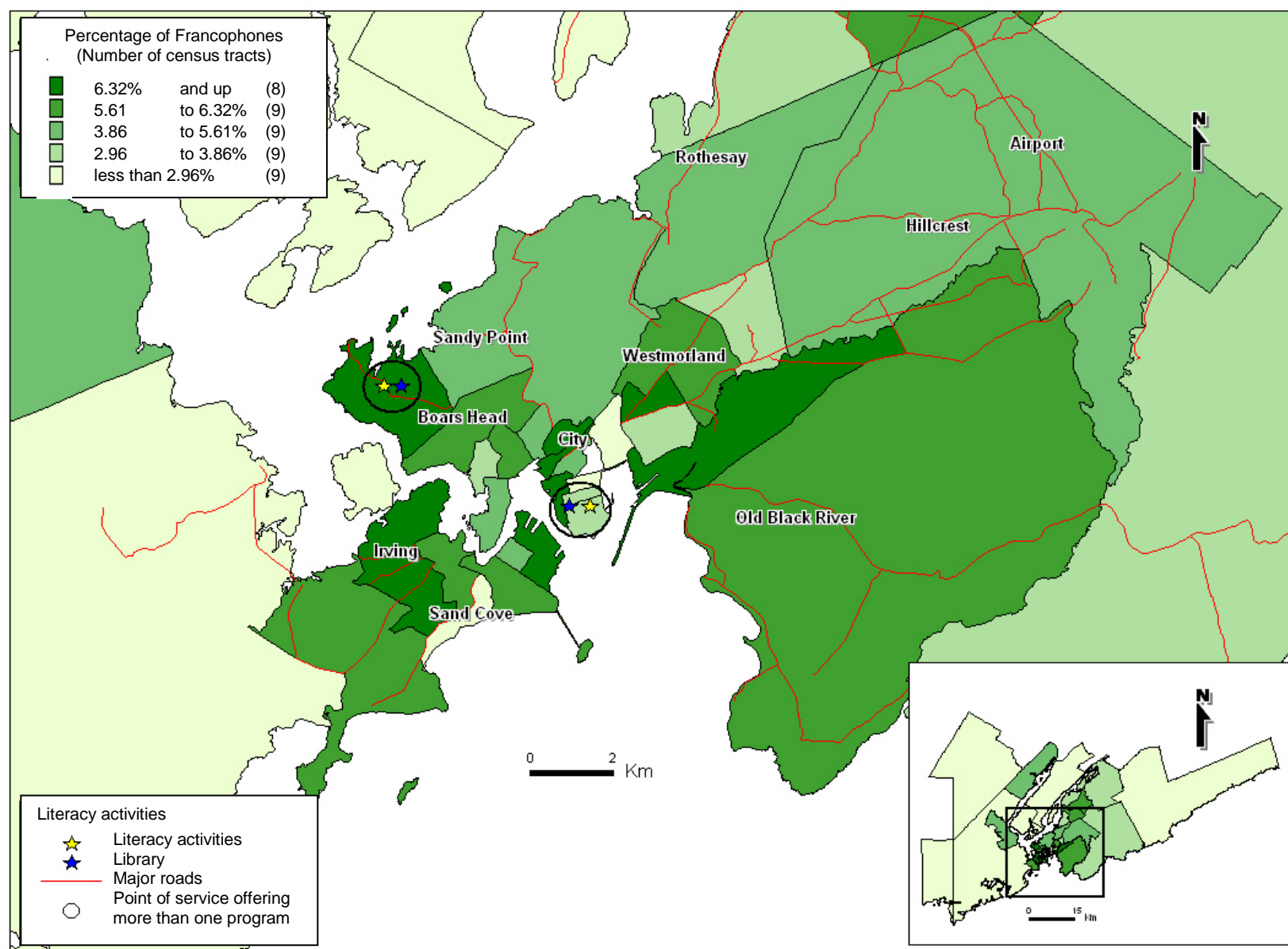
G5.1: Cartography of French-language daycare services offered in Saint John in relation to the percentage of Francophones per census tract, 2006



Source: Statistics Canada, 2006
Software: MapInfo Professional 7.8

Created by: Social Research and Demonstration Corporation
Ottawa, Ontario (Canada)

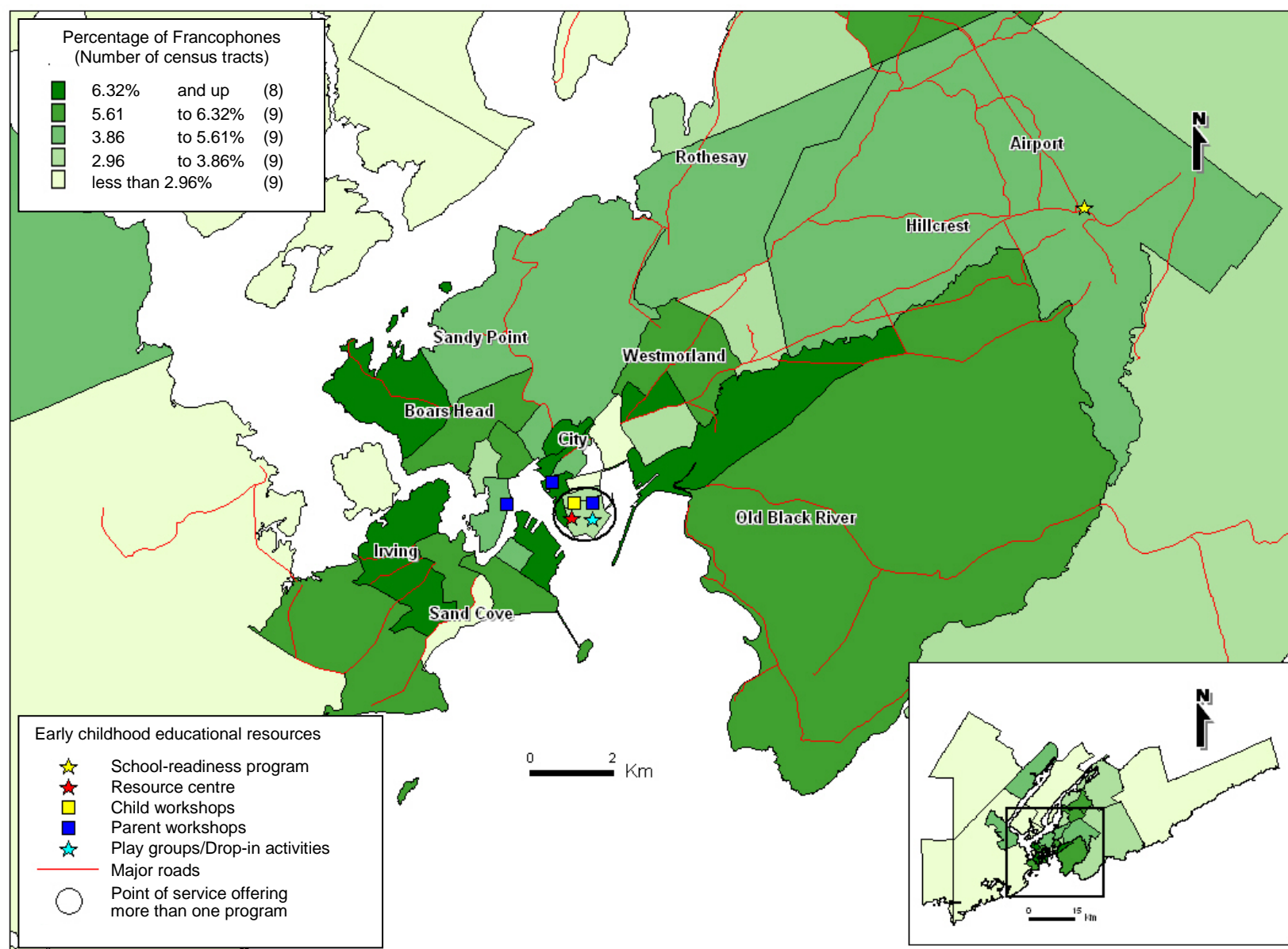
G5.2: Cartography of French-language literacy activities offered in Saint John in relation to the percentage of Francophones by census tract, 2006



Source: Statistics Canada, 2006
Software: MapInfo Professional 7.8

Created by: Social Research and Demonstration Corporation
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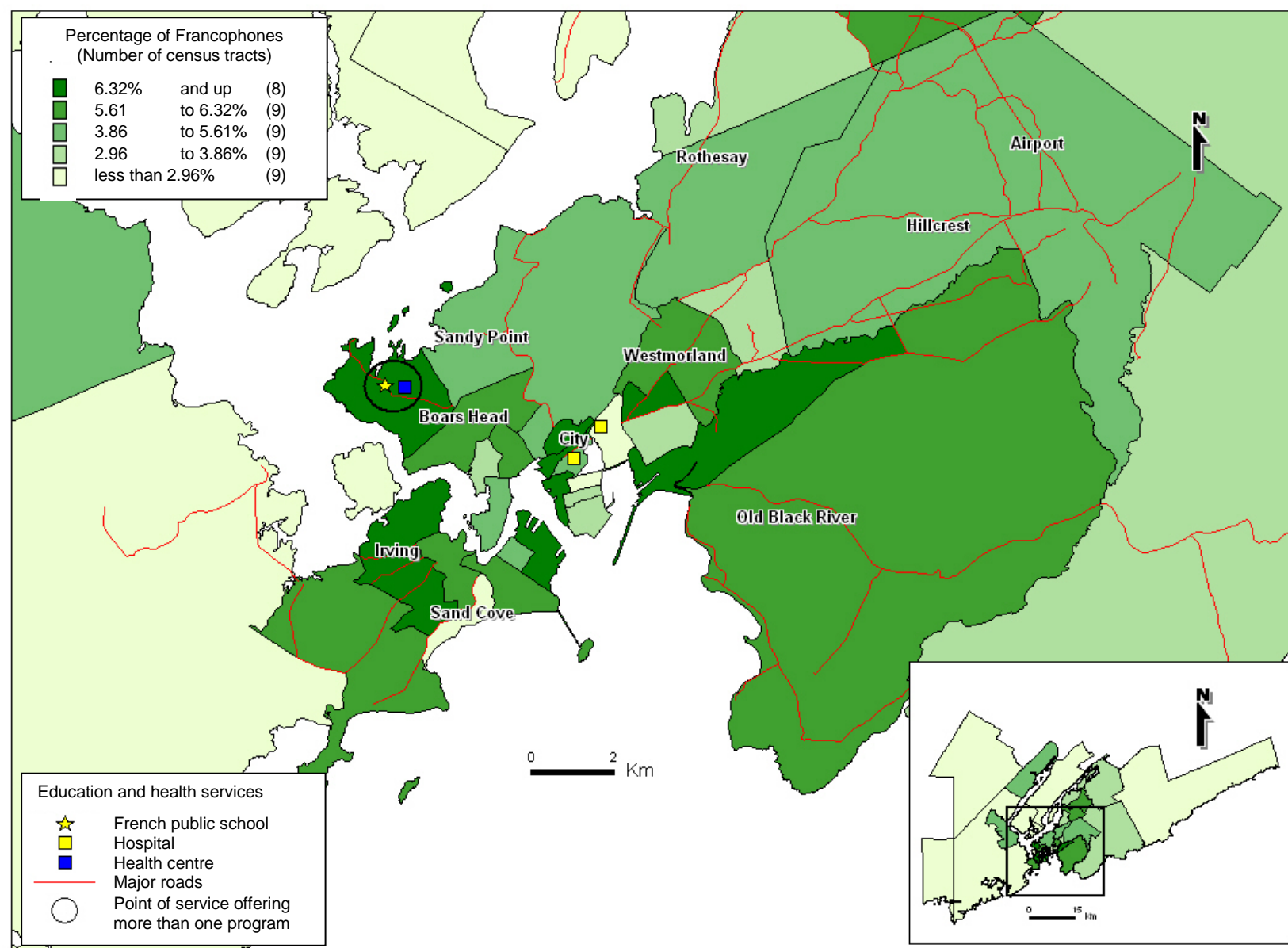
G5.3: Cartography of French-language early childhood educational resources offered in Saint John in relation to the percentage of Francophones by census tract, 2006



Source: Statistics Canada, 2006
Software: MapInfo Professional 7.8

Created by: Social Research and Demonstration Corporation
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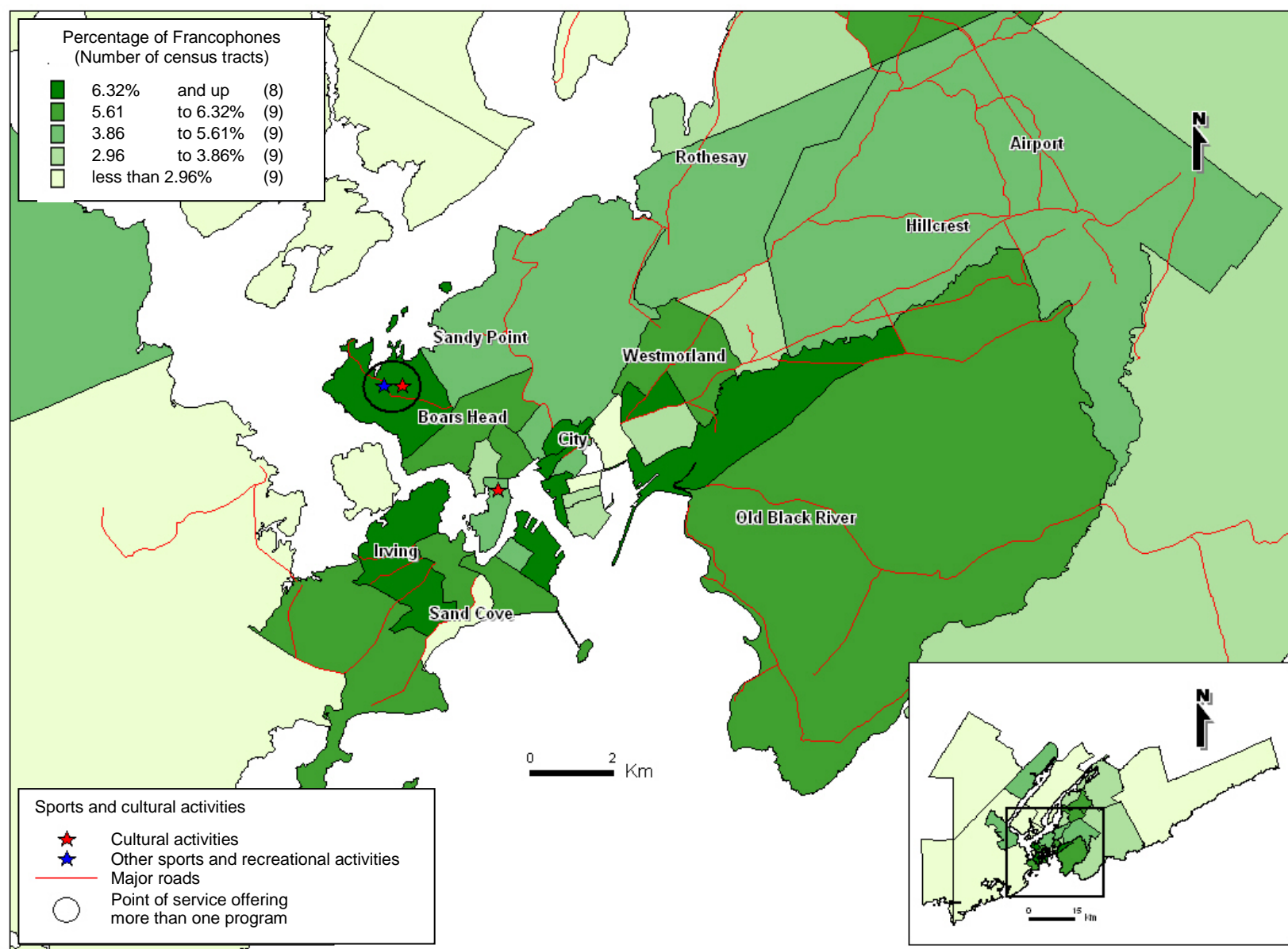
G5.4: Cartography of French-language education and health services offered in Saint John in relation to the percentage of Francophones by census tract, 2006



Source: Statistics Canada, 2006
Software: MapInfo Professional 7.8

Created by: Social Research and Demonstration Corporation
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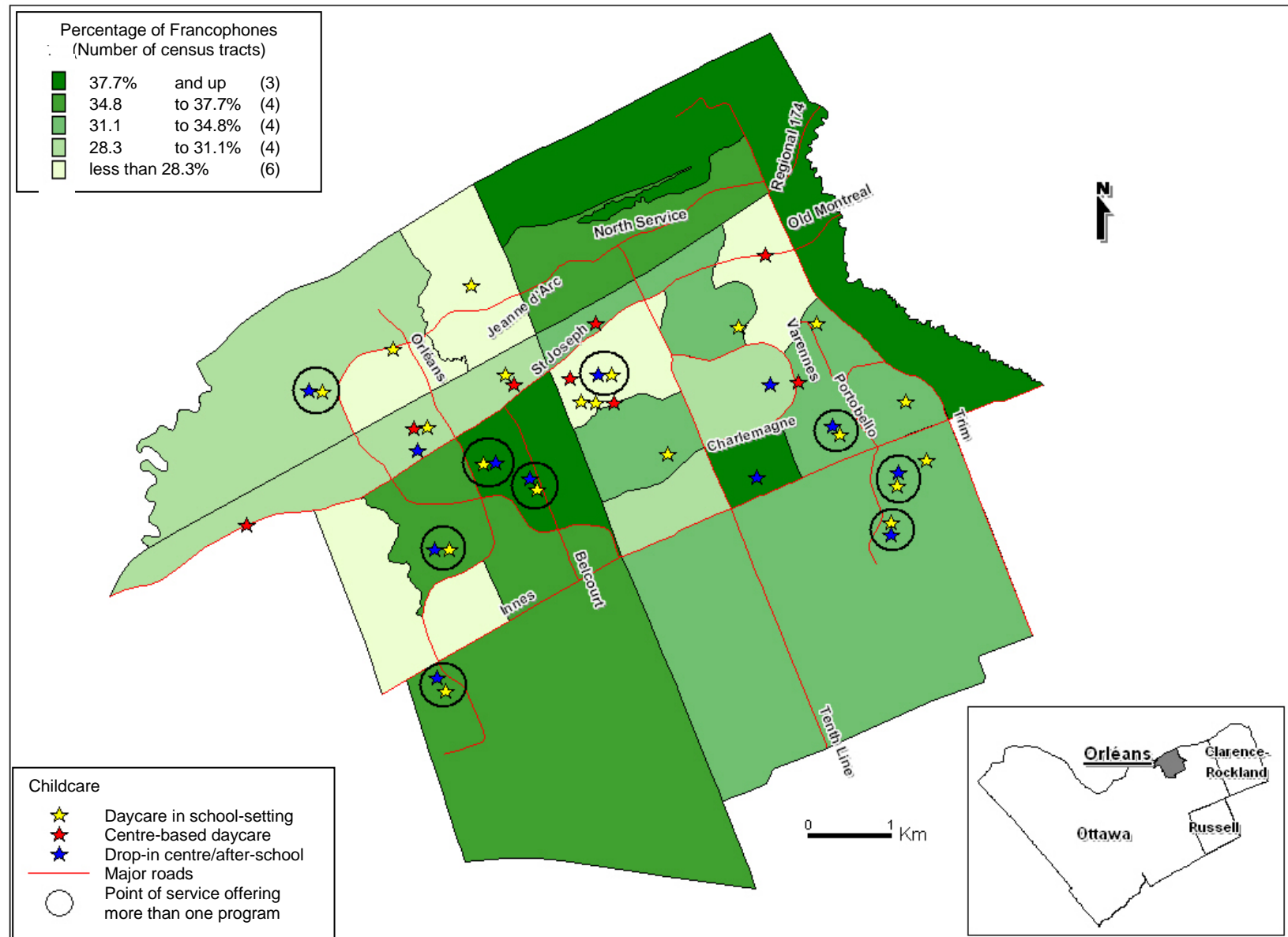
G5.5: Cartography of French-language sports and cultural activities offered in Saint John in relation to the percentage of Francophones by census tract, 2006



Source: Statistics Canada, 2006
Software: MapInfo Professional 7.8

Created by: Social Research and Demonstration Corporation
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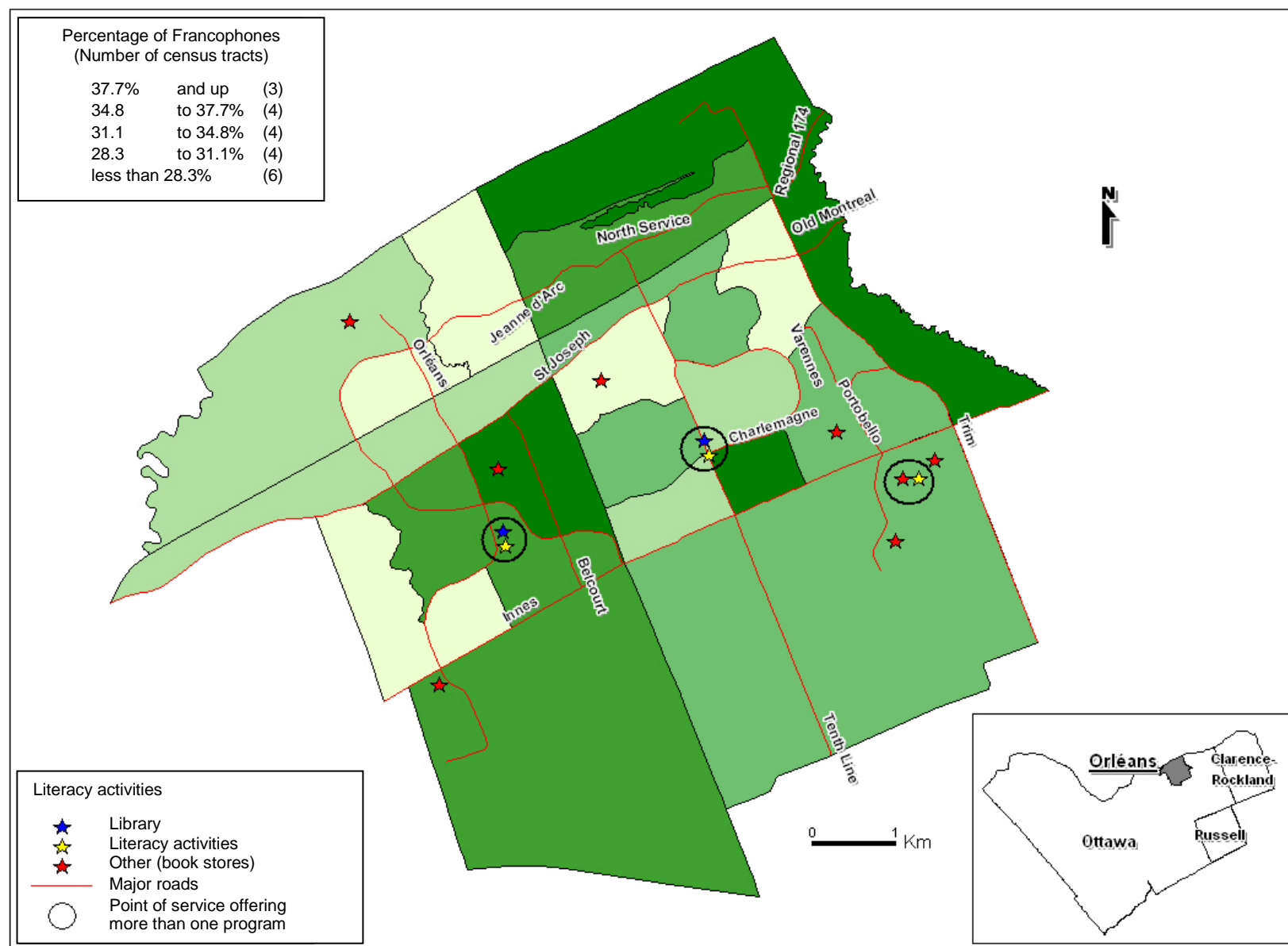
G6.1: Cartography of French-language daycare services offered in Orléans in relation to the percentage of Francophones per census tract, 2006



Source: Statistics Canada, 2006
Software: MapInfo Professional 7.8

Created by: Social Research and Demonstration Corporation
Ottawa, Ontario (Canada)

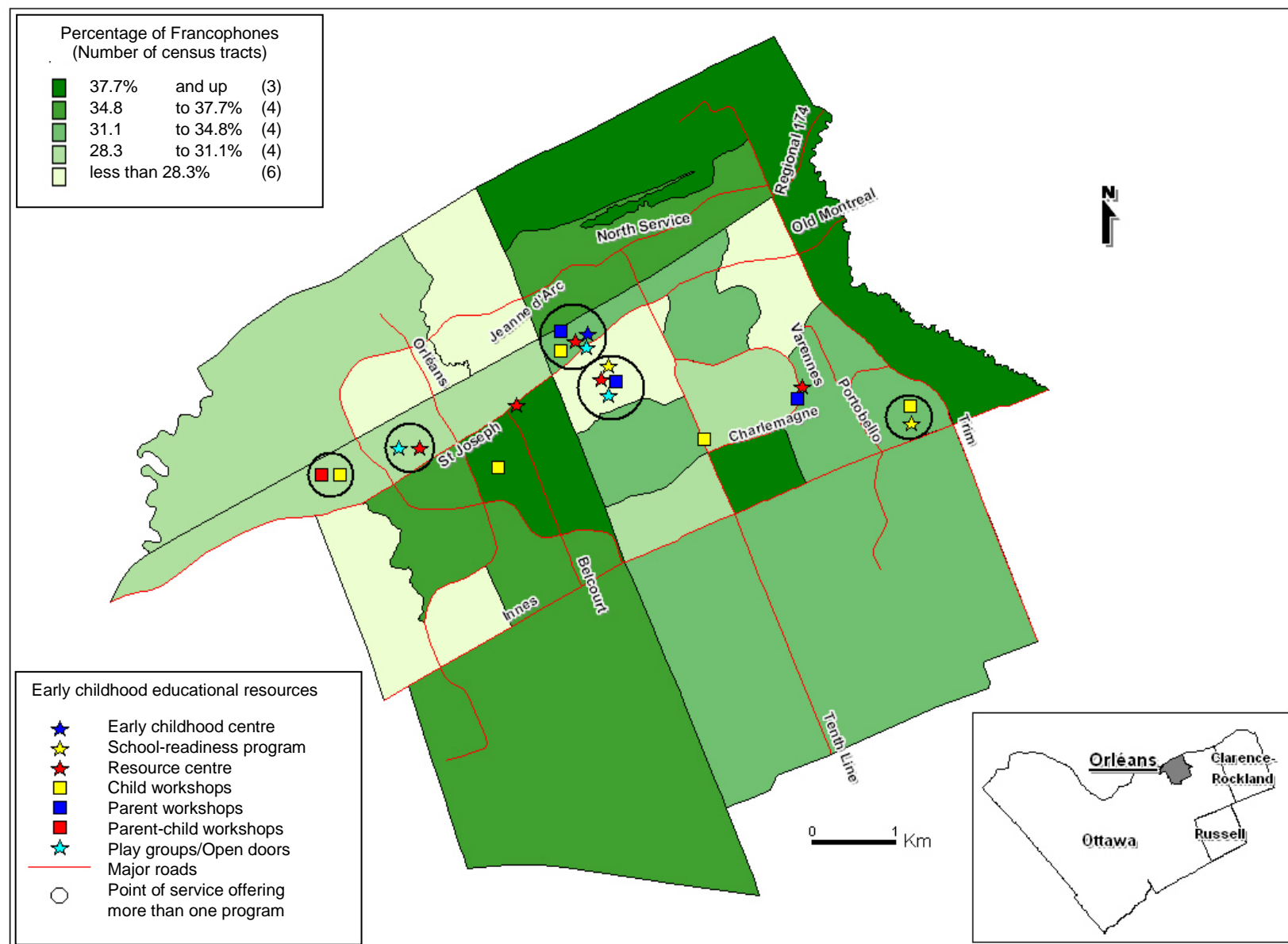
G6.2: Cartography of French-language literacy activities offered in Orléans in relation to the percentage of Francophones by census tract, 2006



Source: Statistics Canada, 2006
Software: MapInfo Professional 7.8

Created by: Social Research and Demonstration Corporation
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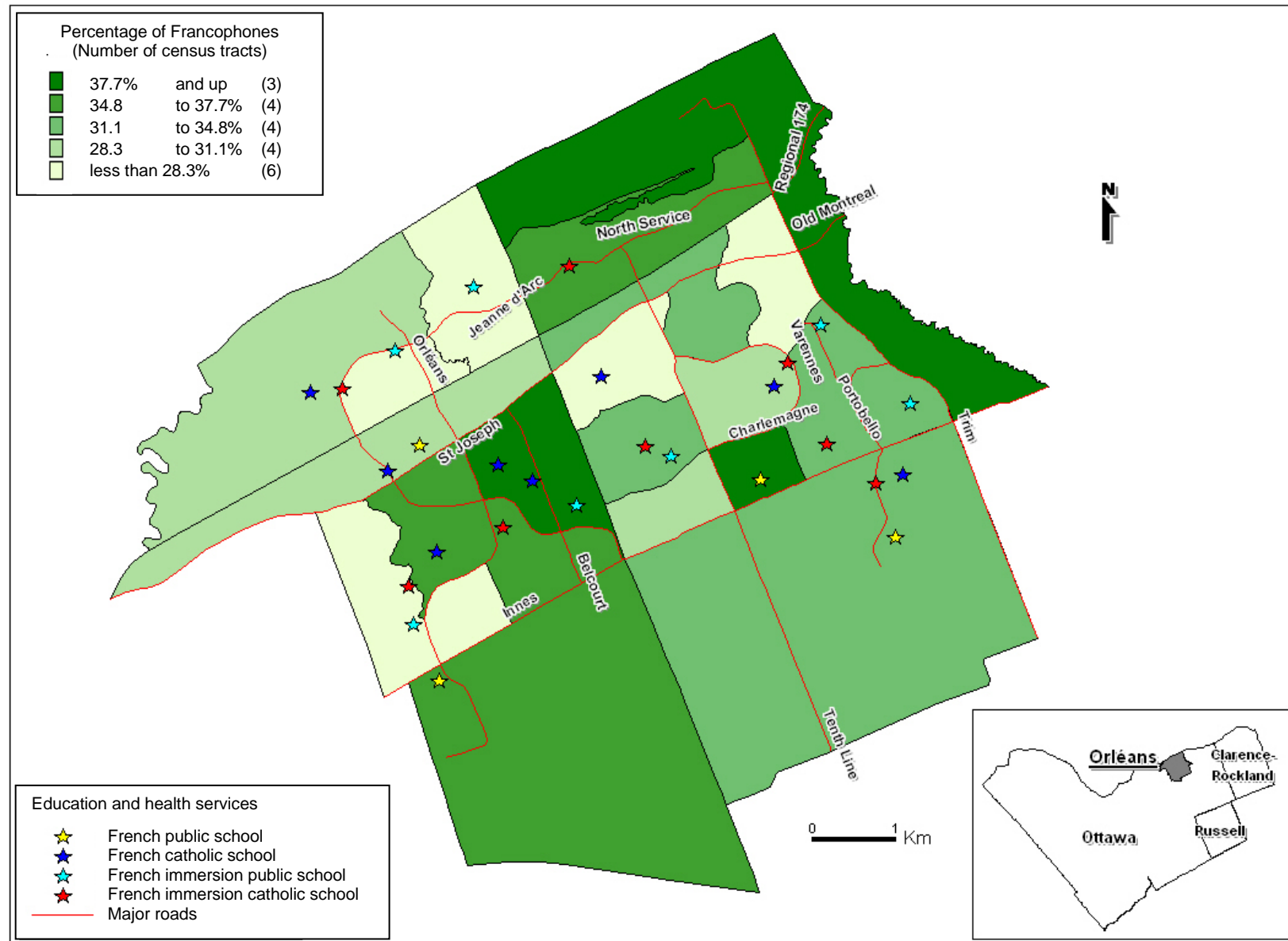
G6.3: Cartography of French-language early childhood educational resources offered in Orléans in relation to the percentage of Francophones by census tract, 2006



Source: Statistics Canada, 2006
Software: MapInfo Professional 7.8

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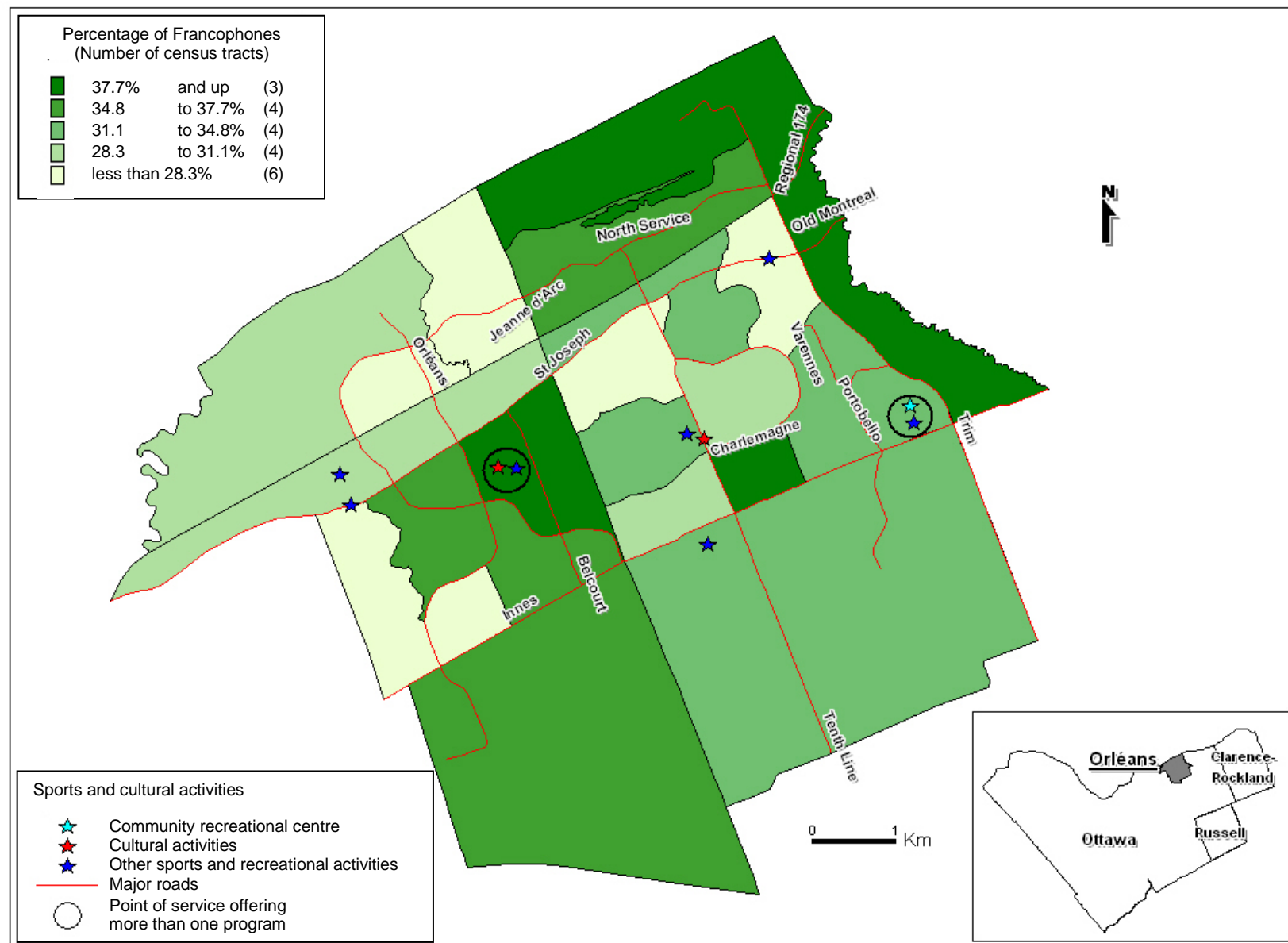
G6.4: Cartography of French-language education and health services offered in Orléans in relation to the percentage of Francophones by census tract, 2006



Source: Statistics Canada, 2006
Software: MapInfo Professional 7.8

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G6.5: Cartography of French-language sports and cultural activities offered in Orléans in relation to the percentage of Francophones by census tract, 2006



Source: Statistics Canada, 2006
Software: MapInfo Professional 7.8

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Appendix H: Glossary

Cronbach's alpha: A statistical index ranging between 0 and 1 that can evaluate the internal consistency of an assessment or measurement instrument composed of a set of items that, together, should contribute to apprehending the same “underlying” dimension (e.g., level of knowledge or motivation). According to this index, the closer the value is to 1, the greater the degree of internal consistency. In practice, an instrument's homogeneity is generally considered to be satisfactory when the coefficient's value is at least equal to 0.80 (Tabachnick and Fidell, 2007).

Factor analyses: The objective of factor analysis is to condense information, without much loss. A factor analysis reduces a large number of items or statements to a restrained number, by grouping together statements that measure the same dimension (e.g., parenting style, or domain A, Awareness of self and the environment, of the EYE-DA), we thus obtain a scale constructed from the sum of relevant statements and representing the dimension being studied.

Internal consistency: See Cronbach's alpha.

Floor effect: Tendency of a set of data to stabilize around a maximum score (ceiling effect) or a minimum score (floor effect) of the total extent of possible scores for a given scale. This effect may be due to the nature of the phenomenon being studied or to an inadequate manner of measuring it (source: http://www.collegeahuntsic.qc.ca/Pagesdept/Sc_Sociales/psy/psy.htm).

In the case of the Readiness to Learn project, for example, the children assessed for the first time generally obtained a very low mean score for each of the EYE-DA dimensions. In other words, they were able to correctly answer only a few or none of the questions. The interpretation of such a result is that the test is too difficult for the set of children being assessed. The tool does not assess the level of their development and it becomes impossible to establish a pre-intervention level.

ÉLDEQ: The general objective of the *Étude longitudinale du développement des enfants du Québec* (Quebec longitudinal study of child development) 1998-2002 is to learn about the precursors of adjustment to the school environment, to identify the PATHWAYS of this adjustment and to assess its effects over the medium and long terms. The ÉLDEQ 1998-2002 is perfectly congruent with the *National Longitudinal Survey of Children and Youth* (NLSCY, Canada).

NLSCY: The *National Longitudinal Survey of Children and Youth* (NLSCY) is a long-term study of Canadian children that follows their development and well-being from birth to early adulthood. The study is designed to collect information about factors influencing a child's social, emotional and behavioural development. It monitors the impact of these factors on the child's development over time.

EOWPVT-F: The Expressive One Word Picture Vocabulary Test, French version, commonly known as the Gardner naming test, measures expressive vocabulary size, which is more sensitive than receptive vocabulary size for detecting differences between children of

different levels. This tool has excellent psychometric properties (Gardner, 1990) and has been validated in French (Ska, 1995).

EYE-DA: Early Years Evaluation – Direct Assessment (EYE-DA) is an individually-administered direct measure comprised of specific tasks to assess the developmental status and school preparedness of children ranging in age 3 to 6 years old. The EYE-DA assesses the following five domains: awareness of self and the environment; cognitive skills; language and communication; physical/motor (gross and fine motor skills); and awareness and involvement in francophone culture.

Measurement error: This concept refers to the reproducibility of scores obtained by the same individuals when the same test is administered at different times, when an equivalent test is administered, or when the test is administered under different conditions. Theoretically, if one supposes that the dimension effectively measured by a scale is unresponsive to these various non-relevant factors (time of day, respondent's motivation, etc.), then the scores obtained should be identical for a given individual under diverse circumstances. However, in practice, this is not the case, as scores fluctuate from time to time and such fluctuations are attributed to measurement error. Measurement error is assumed to be completely random and non-systematic. For example, use of a thermometer to measure “intelligence” may be totally accurate to the extent that the scores (i.e., the values read on the thermometer) are reproducible.

SVOLM: This survey, the Survey on the Vitality of Official-Language Minorities, pertains to the vitality of Canada's official-language minorities, namely Anglophones in Quebec and Francophones outside of Quebec. The information collected allow for a more in-depth understanding of the current situation of individuals who belong to these groups for priority issues such as instruction in the language of the minority or access to different services in the language of the minority (i.e., health care), and language practices during daily activities both at home and outside of the home.

PPVT: The Peabody Picture Vocabulary Test-Revised, and its French-language adaptation called the *Échelle de vocabulaire en images Peabody* (ÉVIP; Dunn et al., 1993), is a test that requires individuals aged **2.6 years old to adult** to point to pictures. The test has a dual objective, namely, **to quickly determine a subject's receptive vocabulary level** on one hand, and on the other hand, **to detect learning difficulties** in school-age children (if French is both the child's mother tongue and the language of learning). The authors justify the second objective by the fact that vocabulary level “proves to be by far the best predictor of academic success.”

Experimental groups: The Readiness to Learn project has three experimental groups, namely, the program group (G1), the formal daycare comparison group (G2) and the informal daycare comparison group (G3). To lighten the text, the authors have often used the terms G1, G2 and G3 to identify the experimental groups.

EDI: The Early Development Instrument (EDI) was developed by Dr. Dan Offord and Dr. Magdalena Janus of the Offord Centre for Child Studies at McMaster University. The EDI measures children's readiness to learn at school. The EDI is a 104-item checklist that is completed by senior kindergarten teachers for each child in their class and measures readiness for the Grade one learning environment. Although the test is completed for individual children the results are compiled and interpreted for groups of children living within a particular geographic area such as a neighbourhood or city. Thus, the EDI is known as a population-based

measure and is not a diagnostic tool nor is it an indication of a school's performance (source: <http://www.parentresource.on.ca/documents/EDIEnglish/Clementine.pdf>).

PMK: Term used by Statistics Canada in its surveys to identify the respondent as the person most knowledgeable about a child.

FOLS: First official language spoken.

Statistics Canada weights: The Survey on the Vitality of Official-Language Minorities (SVOLM) is based on a complex sampling design where each person does not have the same importance in the survey design. To make its sampling representative of the anglophone/francophone minority population, Statistics Canada calculates a weight for each of the observations from the sample. Indeed, each person included in the sample represents not only him/herself but also a number of other people who were not included in the target sample (SVOLM User Guide 2006, p. 11).

Statistical power (Cohen, 1988): The statistical power of a test is defined as the probability of rejecting the null hypothesis, and consequently of *concluding that the phenomenon exists*. In other words, power = 1 – prob (type II error). A Type II error (or β) is the probability of accepting the null hypothesis when the latter is false, and consequently a failure to observe the effect.

Statistical power is dependent on three parameters: the significance threshold (α); the reliability of the sample results; and the effect size, i.e., the degree to which the phenomenon exists. By convention, statistical power is 0.8.

LICO: Low income cutoff.

External validity: Degree to which experimental results can be generalized to other complex and concrete situations. Examples: Will the results obtained in an experimental school also be obtained in regular classes? Will the results obtained in the program group also be obtained by other groups in the general population? (Source: Le grand dictionnaire terminologique.)

Internal validity: Internal validity characterizes a study's capacity to test the hypothesis on the basis of which it was designed. It corresponds to the question: "Can it be stated that X causes Y to vary and not some other variable?" (Source: Le grand dictionnaire terminologique.)

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