

**Understanding Key Informant's Perceptions of the
Impact and Implementation of
School Nutrition Policy in Manitoba Schools:
A Qualitative Case Study Approach**

By

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ABSTRACT

Purpose: To evaluate implementation and impact of a provincially mandated requirement for school nutrition policy (SNP) using a qualitative case study approach.

Sample/Setting: Seventy nine participants from two elementary schools and one secondary school within one school division in Winnipeg, Manitoba consented to participate.

Methods: The perceptions of teachers, parents, administrators, students, custodians, education assistants, and food service operators were explored using observations of the school environment, semi-structured interviews and focus groups.

Results: Implementation and impact varied markedly between schools. Common barriers include: negative beliefs and attitudes, inadequate school and community resources and ineffective communication.

Major impacts include changes to food sales and increased awareness of nutrition.

Conclusions: Impacts of the SNP have been noted however, barriers indentified in this study need be addressed in order to provide schools the best opportunity for success. Each key informants group provided useful insights into

implementation and impact of SNP.

Implications: This study demonstrates the importance of considering multiple perspectives when evaluating SNP. Results of this study will be useful to policy makers to inform future SNP efforts.

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DEDICATION

This thesis is dedicated to my great uncle Ernest Craik. His thirst for knowledge and support for higher education has always been a source of inspiration.

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CHAPTER I: INTRODUCTION

Background

Ensuring children are well-nourished is fundamental to all dimensions of their health and well-being. Good eating habits in childhood and youth have immediate and long-term benefits. Adequate child nutrition is essential for maintaining optimal child growth, development and health (Florence, Asbridge & Veugelers, 2008). *Eating Well with Canada's Food Guide (EWCFG)* is a guideline of adequate food intake by age and gender for each food group and is often used by Canadian health professionals and researchers as an indicator of adequate food intake (Health Canada, 2007). When compared to the *EWCFG*, many Canadian children are not consuming enough vegetables and fruits, milk and alternatives and meat and alternatives (Garrigue, 2009; Starkey, Johnson-Down, & Gray-Donald, 2001). Similar findings were demonstrated in the 2009 Manitoba Youth Health Survey (Partners in Planning for Healthy Living).

Notwithstanding inadequate intake of food groups, overconsumption of high calorie low-density foods is a concern, and one which plays a key role in the burgeoning prevalence of child overweight and obesity, that has become a significant health concern. The prevalence of child overweight has doubled and obesity tripled in Canada over the past 25 years (Shields, 2004). In Manitoba, the prevalence of child overweight and obesity has almost doubled since 1981 with a current estimate of one-third of Manitoba children being overweight or obese (Willms, Tremblay, & Katzmarzyk, 2003; Yu, Protudjer, Anderson, & Fieldhouse, 2010). Child overweight and obesity can contribute to the onset of several chronic diseases including type 2 diabetes, cardiovascular disease

and cancer (Freedman, Dietz, Srinivasan & Berenson, 1999; Willms et al.). Being overweight also carries social stigma and may cause emotional distress in children or lead to bullying (Edmunds, 2008).

Paradoxically, while the prevalence of child overweight and obesity continues to increase, inadequate access to food – indicated by child food insecurity is also an issue in Manitoba. Fifteen percent of six to eleven year old children in Manitoba live in food insecure households (Yu et al., 2010). Children from low-income households are less likely to attain adequate intake for many nutrients (Munoz, Krebs-Smith, Ballard-Barabash, & Cleveland, 1997). Yet, at the same time the incidence of overweight and obesity is high amongst children living in food insecure households (Yu et al.).

Many strategies have been proposed to address child nutrition concerns such as reducing the marketing of sugar-sweetened and energy-dense foods and beverages to children, implementing pricing that encourages consumption of nutritious foods, and incorporating food and nutrition into school curriculum. Strategy documents typically include recommendations for multiple actions within a variety of sectors (Baranowski, 2009). In most cases, school is identified as an environment in which child nutrition can be readily influenced. It is an institution in which the majority of children spend approximately 200 days each year and there are many opportunities to influence child nutrition within the school setting (e.g., food service, curriculum, and nourishment programs). Over the course of a school year a student may eat up to 200 lunches at school, eat food at numerous parties, dances or cultural events, buy food and beverages from vending machines, attend breakfast or snack programs, or receive food as a classroom incentive or reward. Offering and promoting healthy food and drink choices

throughout the school day can therefore have a significant impact on the overall nutrition of children. Establishing a school environment which makes nutritious choices the easy choices requires a commitment to change, which may be made easier through supportive policies.

Recognising this, Manitoba introduced a school nutrition policy initiative, where each school division was responsible for creating and implementing divisional or school level SNPs. The report of the Manitoba Healthy Kids, Healthy Futures Task Force released in June 2005 contained five recommendations:

1. The provincial government require all schools to have a written school food and nutrition policy as part of their school plan.
2. The provincial government provide model policy statements as examples, to help schools or school divisions to develop specifics to suit local needs and circumstances.
3. The provincial government provide “Guidelines for Foods Served at Schools” as well as a series of tools and resources that schools could access to help them take action in this area.
4. Schools report annually to parent advisory councils and MECY on actions taken regarding written school food & nutrition policies.
5. These recommendations be phased in over a period of two years beginning in the 2006 – 2007 school year for grades K-6 with remaining grades to follow in the 2007 – 2008 school year.

These recommendations were consistent with actions occurring in other Canadian jurisdictions and internationally. Subsequently, in 2009 the requirement of schools having a SNP was legislated as part of the Public Schools Act.

Common rationales to support the need for School Food and Nutrition Policy

include:

- Makes the healthy choice the easy choice.
- Promotes consistency of teaching and practice.
- Provides a framework for action.
- Demonstrates support publicly.
- Focuses attention on the need for change.
- Engages the community in the process.
- Builds nutrition into school infrastructure.
- Provides support, direction, and guidance.
- Provides accountability.
- Assists with evaluation.

(P.Fieldhouse, personal communication, July 3, 2011).The mandating of school nutrition policies represents a major policy intervention. Different jurisdictions in Canada, the US and internationally have adopted various approaches ranging from laissez faire to legislation. Especially in light of increasing interest in evidence-based practice it becomes critical to evaluate such interventions so as to generate ‘practice-based evidence’. To assess the implementation and impact of SNPs, the Government of Manitoba has undertaken a series of quantitative evaluations including: a series of school food environment surveys, a SNP content analysis and a review of communication of SNP via school websites. These quantitative studies have indicated changes due to the SNP, but, they do not indicate why or how these changes have occurred, questions that are best answered using a qualitative approach.

Objective

This thesis study uses a qualitative case study approach to create an understanding of SNP from the perspective of the school community, essentially exploring how and why changes have or have not occurred. Through a series of key informant interviews

and focus groups, the perceptions of administrators, teachers, education assistants, school food service personnel, custodians, students and parents will be described and analysed to identify strengths and weaknesses of SNP implantation to date. This study utilizes the socio-ecological model as a means to ground and interpret findings, acknowledging that schools exist within a broader more complex social system that itself influences what the school can achieve.

Context

This case study:

1. Is bound to one school division within the City of Winnipeg, Manitoba.
2. Is not representative of all schools in Winnipeg or Manitoba.
3. Is not designed to assess impact of SNP on individual nutrition status (e.g., obesity).
4. Was conducted during the months of April to June and therefore does not examine differences across time (i.e., does not look at differences between seasons).

Significance

The qualitative case study approach is a novel approach to SNP evaluation which is not commonly used by SNP evaluators. Results of this study will be used to influence future decision-making about the SNP initiative including: enhancing support for and guiding allocation of resources toward the policy, and providing accountability for SNP's. This study introduces a unique approach to SNP evaluation while also contributing to evidence based research.

CHAPTER II: LITERATURE REVIEW

Child Nutrition

Nutrition for growth and development.

Adequate nutrition is imperative for optimal child growth and development. In Canada, an adequate diet is considered to be one that closely follows *Eating Well with Canada's Food Guide (EWCFG)*, a guide developed by Health Canada which provides recommendations for number of servings per day for each food group (Table 2.1) (Health Canada, 2007).

Table 2.1: EWCFG Recommended Number of Servings per Day for Children

Age in years (gender)	2-3 (Male & female)	4-8 (Male & female)	9-13 (Male & Female)	14-18 (Female)	14-18 (Male)
Vegetables and Fruits	4	5	6	7	8
Grain Products	3	4	6	6	7
Milk and Alternatives	2	2	3-4	3-4	3-4
Meat and Alternatives	1	1	1-2	2	3

(Adapted from Health Canada, 2007, p.7)

Maintaining an adequate diet can help children achieve optimum growth, as well as physical and mental development during the formative years. Moreover, children who regularly consume foods recommended by the EWCFG have been found to achieve higher academic performance and have fewer school absences due to illness, as compared to children who do not frequently consume these foods (Florence, Asbridge & Veugelers, 2008; Fu, Cheng, Tu & Pan, 2007).

Some of the recommendations made in the EWCFG are not being met by many children, including intake of: milk and alternatives, fruit, vegetables, meat and alternatives. This is concerning because foods recommended in EWCFG are essential for child health. For instance, children who regularly consume milk and alternatives tend to obtain a higher intake of many nutrients, such as; calcium, vitamin A and folate (Bowman, 2002; Murphy, Douglass, Johnson, & Spence, 2008; Starkey, Johnson-Down, & Gray-Donald, 2001). They are also more likely to have larger stature and increased bone density making them less prone to bone fractures (Black, Williams, Jones, & Goulding, 2003). However, many children, especially girls, do not achieve recommended intake of milk and alternatives (Fiorito, Mitchell, Smiciklas-Wright & Birch, 2005). Those who do not consume adequate amounts of milk and alternatives on a regular basis during late childhood and adolescence have been found to be twice as susceptible to fractures later in life (Kalkwarf, Khoury & Lanphear, 2003; Teegarden, Lyle, Proulx, Johnston & Weaver, 1999). Yet, milk and alternative intake has been found to rapidly decrease, particularly in females, during early adolescence (Bowman). Milk intake habits during late childhood and adolescence often carry on into adulthood; therefore encouraging milk and alternative consumption amongst school aged children can help to enhance child nutrition status and the formation of lifelong milk consumption habits (Teegarden, et al.).

Fruits and vegetables are also important for child growth and development as they are rich in antioxidants, fibre, vitamins and minerals, which can help protect immune function and bone development (Joshi-pura et al., 2001; Tylavsky et al., 2004; Vatanparast, Baxter-Jones, Faulkner, Bailey & Whiting, 2005). Children and adolescents

who consume five or more servings of fruits and vegetables per day are also less likely to be overweight or obese than those who eat fewer than five servings daily (Yu, Protudjer, Anderson & Fieldhouse, 2010). Fruit and vegetable consumption has been linked to a decreased risk of developing cardiovascular disease (CVD), hypertension, cancer and type 2 diabetes in adulthood (Bazzano et al., 2002; Joshipura, et al). Increasing fruit and vegetable intake by even three servings per day has been found to drastically decrease the risk of cardiovascular disease and all-cause mortality (Bazzano et al.).

Consumption of protein, which is abundant in meat and dairy, is also vital to child growth and development as it plays a role in tissue development, growth and maintenance of cells, building enzymes and hormones, producing antibodies, and maintaining electrolyte balance (Sizer & Whitney, 2003). Children and adolescents who do not consume a diet that closely follows EWCFG have been found to consume less protein than children who follow the EWCFG (Storey et al., 2009). Thus, following the recommendations of EWCFG (especially consumption of vegetables and fruits, milk and alternatives and, meat and alternatives as children often do not achieve recommended intake of these foods) is important for optimal child health.

State of child nutrition in Canada.

In Canada, many children are not meeting recommended intakes for some food groups as set forth in EWCFG. Approximately 70% of children between the ages of four and eight do not meet the minimum recommended daily servings of vegetables and fruits and between the ages of nine and eleven, these recommendations are not met by 62% of girls and 68% of boys (Garrigue, 2009). Inadequate fruit and vegetable intake appears to

be prevalent in many provinces (MacLellan, Taylor & Wood, 2008; Moffat & Galloway, 2008; Veugelers & Fitzgerald, 2005). In Manitoba, 59% of youth (grades 9-12) reported eating two or less servings of fruit and vegetables per day while only 4% indicated consuming at least seven servings (Partners in Planning for Healthy Living, 2009). It has also been found that many Canadian youth, particularly adolescent females, do not regularly achieve adequate intake of meat and alternatives (primary source of protein) and milk and alternatives (Starkey et al., 2001).

Breakfast consumption is another important aspect of good nutrition. It has been found that children who regularly consume a nutritious breakfast are more alert and perform better in school (Rampersaud, Periera, Girard, Adams & Metz, 2005). Thus, it is unsettling that only 49% of Canadian girls and 36% of boys have been found to consume breakfast on a regular basis (Rampersaud et al.). Furthermore, the frequency of skipped breakfasts appears to increase with age, signifying the need to encourage children to adopt breakfast consumption habits and to maintain these habits throughout adolescence (Niemeier, Raynor, Lloyd-Richardson, Rogers & Wing, 2006; Nelson, Lowes & Hwang, 2006).

In addition to inadequate intake of the four food groups, children in Canada have been found to frequently consume energy-dense 'snack foods' such as: cookies, cake, chips and sugar- sweetened carbonated beverages (Moffat & Galloway, 2008; Storey et al., 2009). High intake of energy dense and high fat snacks has been associated with poor academic performance (Fu et al., 2007). It has also been associated with a greater likelihood of being overweight or obese (Anderson & Butcher, 2006; Bowman, Gortmaker, Ebbeling, Periera, & Ludwig, 2004; Ludwig, Peterson, & Gortmaker, 2001).

In Canada, the rate of overweight amongst adolescents (aged 12 to 17) has more than doubled and the obesity rate tripled over the past 25 years, from 15% to 26% being either overweight or obese (Shields, 2004). Child overweight and obesity is also on the rise in Manitoba; in 1981 it was found that 18% of children (aged 7 to 13) were overweight or obese and by 1996 that number had increased to 25% (Willms, Tremblay, & Katzmarzyk, 2003). Today this rate is even higher with almost one-third of Manitoba children being categorized as overweight (22%) or obese (9%) (Yu et al., 2010).

Although child overweight and obesity has increased amongst all income brackets, the incidence is highest within the low socio-economic population (Willms et al., 2003). In Manitoba, over 15% of children live in poverty (this is the third highest provincial rate of child poverty in Canada) and approximately 15% of six to eleven year olds do not have consistent access to food (The Social Planning Council of Winnipeg, 2008; Yu et al., 2010) In addition to an increased likelihood of obesity, children from low-income households are less likely to meet the recommended intakes for many nutrients (Munoz, Krebs-Smith, Ballard-Barbush, & Cleveland, 1997). This suggests that child overweight, obesity and under-nutrition are often connected and are of significant concern in Manitoba.

Consequences of poor nutrition.

Poor nutrition in childhood can have several short-term and long-term negative consequences. In the short-term, it can contribute to undernourishment and/or overweight or obesity, while in the long-term, inadequate nutrition can contribute to the onset of various chronic diseases.

Under-nutrition (characterized by insufficient intake of calories or nutrients to meet the body's needs) is often a consequence of food insecurity in the household. Health Canada (2004), defines food insecurity as having inconsistent economic access to adequate amounts of nutritious food. It has been found that children living in food insecure households do not meet recommended intakes of some food groups, such as fruits and vegetables, and therefore may not be getting enough of the nutrients needed for optimal growth and immunity (Joshi et al., 2001; Kalkwarf et al., 2003; Kelly & Patterson, 2006; Sylvestre, O'Loughlin, Gray-Donald, Hanley, & Paradis, 2007). Undernourished children may be at a disadvantage when it comes to school achievement as inadequate nutrition has been found to hinder academic performance and school attendance (Rampersaud et al., 2005). In addition to being more susceptible to under-nutrition, children living in low socio-economic status (SES) households have a greater tendency to be overweight and obese, partly because of the availability of low nutrient and energy dense foods in lower SES neighbourhoods (Kestilä, Rahkonen, Martelin, Lahti-Koski, & Koskinen, 2009; Yu et al., 2010).

Overweight and obese children and adolescents are more susceptible to elevated blood pressure, iron deficiency, and decreased levels of fitness as compared to their peers with healthy body weights (McGavock, Torrance, McGuire, Wozny & Lewanchuk, 2007; Nead, Halterman, Kaczorowski, Auinger, & Weitzman, 2004; Tussing-Humphreys, Liang, Nemeth, Freels & Braunschweig, 2009). They also have a greater likelihood of experiencing weight-based teasing, shame, depression and social isolation during childhood (Edmunds, 2008; Sjöberg, Nilsson & Leppert, 2005). Researchers in the United States, compared quality of life (QOL) of obese, healthy weight and cancer

diagnosed children and adolescents and found that obese children reported lower QOL scores in all categories (physical, psychosocial, emotional, social, and school functioning) when compared to healthy weight children. Furthermore, QOL for obese children was found similar to that of children with cancer (Schwimmer, Burwinkle, & Varni, 2003).

In the long-term, overweight and obesity can contribute to the onset of several chronic diseases including: cardiovascular disease and associated risk factors (e.g., high blood pressure, and high total cholesterol), type 2 diabetes and some cancers (Freedman, Dietz, Srinivason & Berenson, 1999; Pan et al., 2004; Williams & Going, 1992). Evidence suggests that childhood overweight and obesity often carries over into adulthood. Many overweight adults diagnosed with type 2 diabetes were found to be overweight or obese as children and the onset of type 2 diabetes has been detected in adolescents and children (American Diabetes Association, 2000; Baranowski, Cooper, & Harrell, 2006; Fagot-Campagna et al., 2000; French, Lin & Guthrie, 2003; McGavock, et al., 2007; Williams & Going, 1992; Willms et al., 2003).

Treatment of overweight, obesity and the associated chronic diseases is very costly. In 2006, the Canadian Government spent approximately \$6 billion on treatment, increasing from \$1.8 billion in 1997 (Anis, Zhang, Bansback, Guh, Amarsi, & Birmingham, 2010; Birmingham, Muller, Palepu, Spinelli, & Anis, 1999). In Manitoba, treating chronic diseases related to obesity cost the Manitoba Government in 2008 approximately \$762 million (Krueger, 2010). Even more concerning is the decreased QOL and possibility of premature death that can result from chronic obesity and related diseases (Dietz, 1998). Establishing persistent healthy eating habits in childhood could

help prevent child and adult obesity as well as related diseases, potentially enhancing QOL and reducing cost to health care (Freedman et al., 1999).

Acquiring Food Habits and Skills

There are many factors directing children's food choices, the primary influencers are parents, peers, school environment, the media and the broader social environment (Fox, Dodd, Wilson, & Gleason, 2009; Kubik, Lytle, Hannan, Perry, & Story, 2003; Roblin, 2007). For example, media, particularly television advertisements of high-sugar and high-fat foods aimed at children, have been found to influence the foods children ask parents to purchase or prepare (Taylor, Evers, & McKenna, 2005). The environment (community, city, country) also influences food choice. Increased availability, affordability and reliance on restaurants (especially fast-food) and convenience foods in North America has led to increased consumption of sugar-sweetened beverages, and high fat, high sodium, low nutrient and low fibre foods, which has contributed to the increased incidence of obesity and under-nutrition (Lin, Guthrie & Frazao, 2001; Storey et al., 2009).

Parents are the primary influencers of food choice, especially during the preschool years, as they are usually responsible for procuring and preparing food for the family. Food provision is often affected by the family's socioeconomic status, the cost and accessibility of food (restricted by geographical and political factors) and the amount of time family members can contribute to food procurement and meal preparation (Fieldhouse, 1996; Moore, & Diez-Roux, 2006; Powell, Slater, Mirtcheva, Bao, & Chaloupka, 2007). The religious and cultural aspect of one's family can also play a large

part in development of eating habits and food preferences (Fieldhouse). The family meal is especially important, as it has been found to nurture healthy eating habits for children and youth and increased frequency of family meals has been found to correlate with increased consumption of vegetables, fruits, grains and various vitamins and minerals (Neumark-Sztainer, Hannan, Story, Croll, & Perry, 2003).

Parents' personal food values and knowledge about nutrition influence their children's eating habits (Cullen, Baranowski, Rittenberry, & Olivera, 2000). Food preferences of young children have been found to closely mimic those of parents; this has been associated with the influence of parental role-modeling (Brown & Ogden, 2004; Fisher, Mitchell, Smiciklas-Wright & Birch, 2002). However, when parents go as far as to control and restrict child eating habits, children demonstrate a decreased consumption of vegetables and fruits during their adult years (Wardle, Herrera, Cooke, & Gibson, 2003).

Once children enter the school setting, influences external to the family become more important. Early socialization with peers and teachers within the school setting has been found to further develop child nutrition preferences. This is important because evidence suggests that food habits established during early childhood often persist into adolescence and sometimes adulthood (Birch, Zimmerman, & Hind, 1980). Thereby, targeting behaviour changes at an early age is important for establishing a lasting effect. This can include the use of peer-modeling, which has been identified as one method in which children learn nutrition habits. Recognizing this, some schools have implemented programs in which peers teach and model healthy nutrition behaviours. Results show that peer to peer education and modeling can positively contribute to knowledge, behavior

and attitude changes around healthy eating (Stock, et al., 2007; Story, Lytle, Birnbaum, & Perry, 2002).

Teachers can influence child nutrition in various ways, such as in curriculum, role-modeling, and offering rewards. Incorporating nutrition into the curriculum has been found to assist children in making healthier food choices (Fahlman, Dake, McCaughtry & Martin, 2008). Teacher role-modeling by consumption of certain foods in the presence of children is an effective method of persuading children to eat nutritious foods. However, teachers need to be deliberate and energetic about the food they are consuming in order to make an impact (Hendy & Raudenbush, 2004). In actuality, teachers rarely consume their lunches in the presence of children and teachers are seldom present when children consume their lunches, resulting in a largely lost opportunity for role-modeling (Moore, Tapper & Murphy, 2010). Thus, the school environment can assist children in developing habits and skills that support nutritional eating (Fieldhouse, 2010).

School Nutrition

Food in schools.

Although child preferences are developed early in life, they continue to be shaped throughout childhood. The school environment can impact child nutrition in many ways. Children may consume up to 200 lunches in school each year and food and drink can be purchased from school vending machines, canteens and cafeterias or sold for fundraisers and bake sales. Dances, cultural events, celebrations, nourishment programs, classroom reward and incentives, serve as additional opportunities to access food. This adds up to

approximately 100,000 eating events occurring in Manitoba schools every day, demonstrating the potential for schools to foster healthy eating habits (Fieldhouse, 2010). However, research shows that many school environments do not promote nutritious eating (French et al., 2003; Harrison & Jackson, 2009).

In 2006 (prior to provincial school nutrition policy[SNP] implementation), numerous 'junk' food items (e.g., candy, cookies, chips, french fries, soft drinks, chocolate bars and hotdogs) were amongst the ten most popular foods being sold in Manitoba schools' canteens and cafeterias (Manitoba Health, 2006). Canadian and International researchers have concluded that the availability of high fat, high sugar, nutrient poor food in schools is directly related to increased consumption of those foods even if more nutritious options are available (Vereecken, Bobelijn & Maes, 2005; Winson, 2008). However, children have indicated they would consume more vegetables and fruit at school if they were made accessible (Cullen et al., 2007). A program which offered raw vegetables and fruits during lunch, on a daily basis, saw children consuming less energy dense foods as compared to schools that did not offer raw vegetables and fruit daily (Briefel, Wilson & Gleason, 2009).

Vending machines can play a role in providing healthy food options for students; unfortunately, in many schools this opportunity is not being utilized. Researchers in the United States found that almost one half of students (grades 6-8) had purchased items from a school vending machine in the past seven days, suggesting that food and drink from vending machines can significantly contribute to child food and beverage intake. Additionally, these researchers found a link between increased vending machine purchases and greater consumption of sugar-sweetened beverages (Wiecha, Finkelstein,

Troped, Fragela, & Peterson, 2006). In Manitoba, prior to implementation of SNP, school vending machines were dispensing various non-nutritive, sugar sweetened beverages: 56% sold iced tea, sports drinks and energy drinks; 55% sold fruit punch/cocktails; and 38% sold soft drinks (Manitoba Health, 2006).

Evidence suggests that incorporating the sale of wholesome food and restricting the sale of 'junk' food within the school can positively influence child food choices (Briefel, Crepinsek, Cabili, Wilson & Gleason, 2009). However, food sales are not the only means available for schools to encourage child nutrition. For example, healthy eating can also be taught as part of school curriculum. Secondary school students have indicated uncertainty about which foods in the cafeteria are low or high in fat, signifying a need for nutrition education (Shannon, Story, Fulkerson, & French, 2002). Researchers have demonstrated that children who receive nutrition curriculum scored higher on nutrition knowledge tests when compared to children who do not receive the curriculum, demonstrating the potential benefits of nutrition curriculum (Manios, Moshandreas, Hatzis & Kafatos, 1999; Sahota et al., 2001). A small number of studies have also demonstrated that nutrition education extends beyond fostering awareness to generate positive dietary behaviour changes (Budd & Volpe, 2006).

The physical layout and daily time schedule of the school has also been found to impact student nutrition. For example, researchers in the United Kingdom found that children (aged 5-11) tend to eat slower and consume a greater portion of their meals in lunch rooms that contain tables with table-cloths, dim lighting, and soothing background music as compared to a typical 'institutional' style cafeteria (this is important in the

United Kingdom as schools provide children with nutritious meals) (Pike & Colquhoun, 2009). Researchers in London, Ontario reported that overweight youth (aged 14-16) indicated that extracurricular activities (such as sporting events) often occur during the lunch hour and serve as a barrier to having time to purchase and consume healthy food (Thomas & Irwin, 2009).

Link between health and education.

The prime mandate of schools is to educate students which has traditionally been interpreted and measured as academic success, while little emphasis has been placed on improving student health through education (Daniels, 2008). However, research has shown that student health and academic achievement are intertwined. For instance, children who consume breakfast on a regular basis have been found to perform better on standardised academic tests and tend to have better school attendance (Rampersuad et al., 2005). Overweight and obesity has also been correlated to poor educational achievement and school attendance (Taras, & Potts-Datema, 2005). Moreover, increased fruit, vegetable and dairy intake has been associated with improved academic performance (MacLellan et al., 2008). Children who have a better overall diet quality are also found to perform better academically than children who have been assessed to have poor diet quality (Florence et al., 2008; Glewwe, Jacoby, & King, 2001). Thus, there is sufficient evidence to demonstrate that student health is linked to student scholastic success.

Poor nutrition has been linked with impaired concentration and disruptive behaviour therefore, fostering good nutrition may lead to attentiveness and improved behaviour in the classroom and consequently less need for disciplinary action (Daniels,

2008; Taras & Potts-Datema, 2005). Recognising the link between child health and nutrition could increase the willingness of schools to support nutrition initiatives. By improving child health, schools could see improvement in overall academic performance and school attendance.

Comprehensive school health.

The comprehensive school health (CSH) approach has been proposed as a way to bridge the gap between academic success and child health (Public Health Agency of Canada, 2008). It is a holistic approach to health in schools that extends beyond the classroom and seeks to involve parents, the community and stakeholders (Veugelers, & Schwartz, 2010). There are four main components addressed by CSH: teaching and learning, social and physical environment, partnership and policy. These components work together to create a holistic, comprehensive model of addressing school health on multiple levels (Public Health Agency of Canada).

Traditionally, schools have focused on teaching academic subjects such as mathematics, english and science with little focus on teaching health (Daniels, 2008). Evidence suggests that incorporating health and nutrition into the curriculum agenda can contribute to improved nutrition which in turn could help to improve academic performance (McKenna, 2010). Nutrition education can include learning about: food preparation and skills, factors influencing food choice, energy balance, healthy food choices, and understanding food labels (McKenna).

The social and physical environment of a school is also integral to CSH. Fostering a school community that provides equal opportunities for all students to access nutritious

foods and engages students in the development and implementation of nutrition related activities can help support healthy eating. Peer to peer-modeling has been found to be one method of nurturing positive attitudes that can be used in a CSH approach (Veugelers & Shwartz, 2010). In this way CSH can create an environment which makes nutritious choices the easy choices (McKenna, 2010).

A partnership between the school and the community is another important aspect of CSH. The school can partner with community services or facilities in order to provide more opportunities for nutrition activities than would be available within the school (e.g., grocery store tours, contracts with local producers, use of recreational facilities and health services). Partnerships can also include involvement of parents and the community in planning and implementing nutrition programs and activities within the school. Incorporating community involvement can assist in garnering support for a sustainable CSH approach (McKenna, 2010; Veugelers & Shwartz, 2010).

Nutrition policy is the backbone of the CSH approach, as it provides a plan for meeting CSH goals (Manitoba Healthy Schools, n.d.). Policies that support nutritional teaching and learning, supportive social and physical school environments and community partnerships are essential for successful CSH. Policies need to consider the specific contexts, cultures and experiences of schools, requiring a tailored approach (Veugelers & Shwartz, 2010).

Approach to Nutrition in Manitoba Schools

Curriculum.

Incorporating nutrition into school curriculum can contribute to increased nutrition knowledge, thus, helping children to make healthier food choices (Fahlman et al., 2008). In the province of Manitoba, nutrition curriculum has been incorporated as one component of physical education/health education. It is compulsory for all children in kindergarten to grade 10 to receive physical education/ health education each and every year (Manitoba Education, n.d.).

The province of Manitoba, Department of Education, has specified detailed school nutrition curriculum based on the learning capabilities of each age group. It indicates that children in kindergarten to grade 4, should be introduced to general nutrition concepts and information. The middle year grades should build on nutrition knowledge acquired in the early grades via the introduction of strategies to plan and manage nutrition. The senior year students are expected to plan, manage and analyse nutrition information in regards to nutrition related diseases (Manitoba Education, n.d.).

In Manitoba, resources have also been developed to illustrate how nutrition can be integrated into the curriculum agenda for subjects beyond physical/health education. Dairy Farmers of Manitoba have designed a series of learning modules, *Power to Play Program Manitoba Curriculum Integration*, which provides teachers with lesson plans that use nutrition related material to achieve various priorities of the curriculum agenda. The following are examples of curriculum outcomes that are addressed using nutrition related material in the *Power to Play Program*: English language arts: “ make connections between prior knowledge, ideas, information and oral, visual, and written

text features”, Mathematics: “ Organize data independently, using graphic organizers as diagrams, charts, and lists”, Science: “Recognize that food is a form of energy and healthy eating is essential for growth and development”, Social Studies: “Cooperate and collaborate with others” (Dairy Farmers of Manitoba, n.d.). Integrating nutrition into the core curriculum can reduce the pressure on school staff to incorporate extra lessons into the school day.

Programs and tools to support nutrition in Manitoba.

Various nutrition education programs have been implemented in Manitoba which supports the SNP initiative. For example, *Healthy Buddies Pilot Project* was implemented as part of Manitoba’s healthy schools initiative. This project is being piloted in 20 schools across the province. The premise is to have older students role model healthy behaviours as a method of encouraging younger students to learn about healthy eating (Government of Manitoba, 2009b).

Another program in Manitoba is the Dairy Farmers of Manitoba’s milk program which provides a ballot for a reward every time a child consumes milk at school (Dairy Farmers of Manitoba, n.d.). Further support for nutrition in schools includes a vegetable fundraiser pilot program which was piloted in 66 schools in Manitoba in October 2010. Schools sold vegetable bundles to raise funds in place of traditional fundraising items and the vegetables were sold for the same price across the province, meaning that northern and remote locations could access vegetables for the same cost as in urban areas (Government of Manitoba, 2010).

In 2010, the provincial Healthy Schools initiative featured a Healthy Eating Campaign which provided funding for interested schools to embark on projects that support healthy eating. This funding was used to support activities such as nutrition related games and cooking lessons (Manitoba Healthy Schools, n.d.). Other sources of funding include Breakfast for Learning which provides grants that allow schools to supply breakfast to students at no cost to the student. However, last year their program funding was only able to provide for 42% of schools that applied to the program (Breakfast for Learning, 2010). There are other sources of funding available for nourishment programs (e.g., school fundraising and Child Nutrition Council of Manitoba) but there is not enough funding to meet the needs of children in all Manitoba schools, indicating a need for additional support for nourishment programs in Manitoba (P. Fieldhouse, personal communication, May 14, 2011).

The Child Nutrition Council of Manitoba instituted a fruit and vegetable pilot project which is now in its second year of operation and will be continuing in the fall. The goal of this project is to test various models of providing fruits and vegetables in low-income schools across Manitoba and to identify a sustainable method of program implementation. The intent of a sustainable fruit and vegetable program is to provide produce to children who do not have consistent access to these foods outside of the school setting (Government of Manitoba, 2008).

In addition to the programs and funding available, the Government of Manitoba has developed various nutrition resources, including; the *Manitoba School Nutrition Handbook* (containing model policies and guidelines), a Healthy Lunch Program Checklist, a Step by Step Guide to Healthy Lunches, a Lunch Check (for measuring

changes to lunches consumed at school), and a toll free information line and website (Government of Manitoba, n.d.).

School Nutrition Policy

Policy is an instrument of governance used as a means of achieving specific objectives by creating a direction for action. Establishing government policy is helpful for directing and allocating public resources. It can help to direct the creation of programs to meet specific objectives (Althaus, Bridgman & Davis, 2008).

Schools have been recognized as an institution in which the majority of children can be reached. Therefore instituting a healthy eating policy within the school may be an effective method of addressing child nutrition issues. School nutrition policy (SNP) could be implemented as a method of ensuring that healthy eating is promoted in theory and in practice (Manitoba Healthy Schools, n.d.). An effective SNP will foster an environment that supports healthy food choices, provides students the opportunity to learn and practice good nutrition, makes the nutritious choice the easy choice, and supports and guides a comprehensive school health approach.

School nutrition policies in other countries.

School Nutrition Policies have been implemented in many countries and regions throughout the world. For example, In the United States a *Local Wellness Policy*, enacted in 2004, requires each school district to develop a nutrition policy at a local level to address local needs. Adoption of this policy was only deemed mandatory for schools participating in lunch or breakfast programs recognized by either the “National School Lunch Act” or the “Child Nutrition Act of 1966”. The United States Department of

Agriculture (USDA) stipulated that at a minimum each Wellness Policy must incorporate the following elements: goals for nutrition education, physical activity and food provision, involvement of a variety of key players in policy development, and it must include a plan to measure implementation. The USDA reports that approximately 31,000 schools have implemented a wellness policy (United States Department of Agriculture, n.d.).

According to Caraher, Crawley and Lloyd (2009), the United Kingdom has also implemented school food policies. Each administrative area: England, Scotland, Northern Ireland and Wales, has been in charge of developing its own approaches to school food policy implementation. Scotland, England and Northern Ireland have made school food policies mandatory in all schools, whereas Wales has taken a voluntary approach. All four administrative areas have created guidelines to address foods in schools, using a comprehensive approach. In regions where School Food Policy (SFP) is mandatory (England, Scotland and Northern Ireland), food based standards have been set and nutrient based standards have been set in England and Ireland and in some schools in Wales. In England, Scotland and Northern Ireland, SFP standards are to be included in school inspections.

Several European countries have included changes to school nutrition as a component of national nutrition policies (Milio, & Helsing, 1998). For example, Norway included some school related goals in their updated national policy, *Recipe for a Healthier Diet; Norwegian Action Plan on Nutrition*, these goals include: provide healthier school meals, foster healthy attitudes and eating habits, introduce fruit and vegetable programs, increase participation in school milk programs and encourage

schools to switch to more nutritious food and beverage sales and offerings (Norwegian Ministries, 2007). Iceland's *Nutrition Policy Resolution, May 1989*, is another example of a national policy that includes school nutrition. It recommended that schools, increase home economic and nutrition education in elementary and secondary schools, and make nutritious foods available for students (Milio & Helsing).

School nutrition policies have also been implemented outside of Europe and North America. In 2006, each state and territory in Australia, implemented their own individualised school food and canteen guidelines (The Parents Jury, 2010). Within South America, Brazil is an excellent example of a country which has had a long history of supporting school nutrition by way of a national school lunch program. This program was instituted in 1955, and adapted in 2001 to include the requirement that 70% of funds be spent on local foods (Rocha, 2007).

There are many other countries that have created SNPs or have included school related changes in national nutrition policies. In Canada there is no national school nutrition policy because education and health are the responsibility of Provincial and Territorial Governments. Recognising the pressing need to address child nutrition, many provincial and territorial governments have implemented SNPs.

School nutrition policies in Canada.

Over the past decade there has been growing interest surrounding SNP in Canada.

Currently, almost all provinces and territories have developed SNPs. However, the SNP approaches and frameworks vary considerably between each province and territory.

Table 2.1 is a brief summary of provincial and territorial SNPs (these guidelines are continuously evolving).

Table 2.2: School Nutrition Guidelines in Canada

Province/ Territory	Ministry ⁷ responsible for guidelines	Scope ¹	Overview ¹	Date Implemented ⁷	Voluntary or Mandatory ? ⁷
Alberta	Health and Wellness & Education	Foods sold in all facilities used by children for daycare, learning or recreation.	<ul style="list-style-type: none"> • Based on <i>Eating Well With Canada's Food Guide (2007) (EEWCFG)</i> • Food divided into 3 categories: choose most often, sometimes and least often. 	June 3, 2008	Voluntary
British Columbia	Education – implementat- ion Healthy Living and Sport – development	All foods and beverages sold and served in schools.	<ul style="list-style-type: none"> • Based on <i>EEWCFG</i> • Foods divided into 4 categories: choose most, sometimes, least and not recommended. 	Elementary: Jan 2008 Middle & Secondary: Sept 2008	Mandatory

			<ul style="list-style-type: none"> • At least 50% of food sold should come from “choose most”. 		
Manitoba	Manitoba Healthy Living, Youth & Seniors	Scope varies between school divisions but, provincial guidelines suggest all foods sold and served.	<ul style="list-style-type: none"> • Comprehensive approach. Incorporates food sales, curriculum, and role-modeling. 	Phased in over two years starting in 2006/2007 for grades K-6 and 2007/2008 for grades 7-12.	Policy: Mandatory Guidelines: voluntary (except trans-fat)
New Brunswick	Education	Foods sold and offered in public schools.	<ul style="list-style-type: none"> • Based on <i>CFGHE (1992)</i> • Food divided into 3 categories: maximum nutritional value, moderate, and minimum • Foods of minimum value were phased out <p>Also incorporated stipulations regarding: fundraising, portion size, eating environment, food safety, and food rewards.</p>	March 2005 Additional criteria added March 2008	Mandatory
Newfoundland and Labrador	Department of Health and Community Services Department of Education	All foods and beverages sold and served in schools and school sponsored events.	<ul style="list-style-type: none"> • Based on <i>EWCFG</i> 	Enacted in Fall 2008	Not sure

Northwest Territories	No Guidelines in Place				
Nova Scotia	Department of Education	All foods sold and served in public schools when students present and no promotion/advertising of 'unhealthy' foods.	<ul style="list-style-type: none"> • Based on <i>CFHGHE</i> • Foods divided into 3 categories: maximum nutrition (sold daily), moderate nutrition (sold 2X per week), minimum nutrition (sold 1-2X per month during special functions) 	Phase in began 2006/2007 Fully implemented by June 2009	Mandatory
Nunavut Territory	No Guidelines in Place				
Ontario²	Education	All foods and beverages sold in all school venues, through school programs and at all school events. Guidelines allow up to 10 exemption days/year	<ul style="list-style-type: none"> • Nutrition standards based on <i>CFGHE</i> • Food divided into 3 categories; foods served most (should make up at least 80% of foods available) food served less (should be less than 20% of foods available), foods not permitted for sale 	Sept, 2011	Mandatory

Prince Edward Island ³	Dept of Health (DoH) and PEI Healthy Eating Alliance (a non-profit organization)	Foods served and sold in schools.	<ul style="list-style-type: none"> • Healthy foods will be available more often and less healthy foods will be available less often. 	<p>SNP for schools without cafeterias implemented in 2006.</p> <p>SNP for schools with cafeterias being created as of 2009</p>	Mandatory
Quebec ⁴	Ministry of Education & du Loisir et du Sport	Foods sold and served in schools.	<ul style="list-style-type: none"> • Offer variety but prioritize nutritious foods • Eliminate foods of low-nutritional value from school offerings • Provide supportive lunch environment 	January, 2008	Mandatory
Saskatchewan ⁵	Health Education	All foods offered or sold in all Saskatchewan Schools and at sporting events.	<ul style="list-style-type: none"> • Based on <i>CFGHE</i> and <i>Health Foods for my School</i> (Saskatchewan Ministry of Health). • Create a written plan for all nourishment programs • Follow food safety standards 	Nov 2009	Voluntary

Yukon⁶ (no guidelines, only policy)	Department of Education	All schools in Yukon Territory	<ul style="list-style-type: none"> • Foods available should reinforce nutrition education. • Based on CFGHE, EWWCFG, First Nations, Inuit and Métis, and Food from the Land: Traditional Yukon Food. • SNPs should also address: role-modeling, time allotted for eating, fundraising, food as rewards and food safety. 	Enacted September 2008	Not sure
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1. Adapted from Dietitians of Canada, 2008.
2. Information about Ontario SNP derived from; Ontario Ministry of Education, 2010.
3. Information about PEI SNP derived from ;PEI Healthy Eating Alliance, n.d
4. Information about Quebec SNP derived from: Government of Quebec, 2007
4. Information about Saskatchewan SNP derived from; Saskatchewan Ministry of Education, 2009.
5. Information about Yukon SNP derived from; Yukon Education, 2008
6. Federal/ Provincial/ Territorial Group on Nutrition (P. Fieldhouse, personal communication, June 2011).

Evolution of School Nutrition Policy in Manitoba

In 2003, Manitoba became the first province to institute a Ministry of Healthy Living, with a focus on prevention and health promotion, in contrast to the traditional preoccupations of the health care system. In 2005, Healthy living launched the Healthy kids, Healthy Futures All-Party Task Force to initiate discussions with Manitobans across

the province in an effort to better understand how to address the health needs of Manitoba children, particularly regarding physical activity, nutrition and injury prevention.

Between January and March 2005 the task-force held 12 public meetings across the province which were attended by a total of 350 people. Additionally, the task-force conferred with children and youth from 13 schools within Manitoba and it hosted a one day Healthy Living Forum within the city of Winnipeg. Responses were also submitted and acknowledged through mail and e-mail.

The task-force used information garnered to develop a set of strategies to improve child health. One key recommendation was to increase access to nutritious foods in schools and it suggested that one way to support this was to have the provincial government instruct all schools to have a written SNP. The task-force recommended that the Government of Manitoba assist schools by providing model statements for schools to follow when drafting SNPs and by developing tools and resources to support implementation of SNPs. Furthermore, they recommended that schools be required to provide annual progress reports on the SNP within the annual School Plan. Finally, the task-force recommended that SNPs be phased in over a two year period beginning in 2006-2007 for kindergarten to grade six and the following year for grades seven through twelve (Manitoba Health and Healthy Living, 2006).

Community members expressed a belief that schools are a setting in which child health should be addressed. Pertaining to nutrition needs that could be addressed in schools, Manitobans indicated a need for increased nutrition education, food security and to address the availability of less healthy foods and beverages available in schools.

Community members also felt that, due to the importance of promoting healthy foods in

schools, a set of guidelines was warranted (Manitoba Health and Healthy Living, 2006).

Manitoba has over 600 public schools which vary in population (ranging from fewer than 20 students to greater than 1000) and location (urban, suburban, rural, northern, and remote). Recognizing the need to respect the differing circumstances and requirements of Manitoba schools, the province adopted an enabling approach to SNP development which allowed for school-level decision-making (Fieldhouse & Rutherford, 2010). To assist schools and school divisions with creation of nutrition policies, the Government of Manitoba created the *Manitoba School Nutrition Handbook* which contains guidelines for foods served at school as well as model policies and tools. Various projects were also instituted to help schools with the nutrition policy implementation process, including: healthy vending demonstrations, a school nutrition support team, regional workshops for nutritionists and educators, a nutrition forum, student leadership awards, parent outreach, a toll-free school nutrition information line, and a website.

In 2009 the requirement that each school have a written SNP was legislated as part of the Manitoba Public Schools Act (Government of Manitoba, 2009a). Currently, SNPs have been developed in almost all Manitoba School Divisions. Most divisions have prepared a SNP that is to be implemented within each school, while a few divisions have prepared a simple statement indicating that each school is to implement its own individual SNP (Rutherford, & Fieldhouse, 2011).

Evaluation of School Nutrition Policy

What is an evaluation?

An evaluation is a systematic collection of data that will allow for judgment about the policy, a reflection of what has happened and an assessment of achievement of goals. By conducting an evaluation of Manitoba SNP it can help to enhance support for the policy, assist with the appropriate allocation of resources, help to inform future decision-making and contribute to the evidence base. To conduct an evaluation it is essential to first decide on the indicators to be evaluated.

Indicators are variables which help to measure the success of a policy (World Health Organization, 2008). Prior to evaluation it is important to select indicators that will appropriately identify progress. They could include changes to the school environment, for example modifications to: food sold and offered, curriculum, and structure of the school day or lunch hour. Improvements to child awareness, attitudes, behaviour, food consumption, academic achievement, body mass index, and school attendance could also be indicators of success (Aldinger et al., 2008). Researchers choose to measure specific indicators based on the type of change they are interested in measuring.

Methods of evaluating school nutrition policy.

Indicators can be measured using a variety of data collection methods. Some evaluations are quantitative (generate numerical data), examples include: surveys, self-reported food intake (dietary recall, or food frequency questionnaires), body fat measures (BMI, DEXA scan, fat grip tests), biological changes (blood pressure, blood sugar), and

standardized academic achievement tests. Some indicators are better measured using qualitative methods (creates an understanding of experiences and opinions), examples of qualitative evaluations include: interviews, focus groups, archival records, and observations. The following is a brief overview of the methods used in previous SNP studies to measure indicators and is divided into those that inform about changes to:

1. School environment, 2. Anthropometric and biological, 3. Attitudes, knowledge and behaviour, 4. Implementation and impact, and 5. Compliance.

Changes to the school environment are one common focus of evaluations. Researchers have used pre and post school nutrition policy surveys as a method of monitoring various changes to the school environment including: areas of improvement, and changes to food service (Cullen et al., 2007; Rideout, Levy-Milne, Martin, & Ostry, 2007). Other methods of assessing changes to the school environment include: the use of checklists filled by teachers or administrators, collection of food sales data from cafeterias, canteens and vendors and analyses of menu modifications (Blum et al., 2007; Cassady, Vogt, Oto-Kent, Mosley, & Lincoln, 2006; Cullen & Watson, 2009; McGraw et al., 2000).

Another focus of SNP evaluation involves assessment of physiological and food consumption changes. Some researchers have assessed changes to student BMI after introduction of SNP (Foster et al., 2008; Manios et al., 1999; Sanchez-Vaznaugh, Sanchez, Baek, & Crawford, 2010). Others have examined changes in student food consumption via: self-recorded lunch food records and food and beverage intake questionnaires (Cullen, Watson & Zakeri, 2008; Neuhouser, Lilley, Lund, & Johnson,

2009; Neumark-Sztainer, French, Hanna, Story & Fulkerson, 2005). Another study looked at changes to serum lipid level as an indicator (Manios et al., 1999). Measuring individual changes can be a difficult method to use because students are not a static population which complicates any attempt to measure individual changes over time. Furthermore, this method does not control for outside influences on child health indices (Neuhouser et al.; Probart, McDonnell, Weirich, Schilling, & Fekete, 2008).

Improvements to attitudes, knowledge and behaviour (AKB) related to nutrition is yet another area that can be evaluated. Only a few studies have reported directly measuring these indicators: one pre-post quasi-experimental study used closed-ended questionnaires, and another study used open-ended focus groups to assess AKB (Aldinger et al., 2008; Fahlman et al., 2008). Other researchers have focused on the implementation process as a measure of success. Several have examined the experiences and perceptions of key informants, using open-ended interviews to evaluate level of implementation (Austin, Fung, Cohen-Bearuk, Wardle, & Cheung, 2006; Besgrove, 2008; Brown et al., 2004; Deek, 2006; McDonnell, Probart, Weirich, Hartman, & Bailey-Davis, 2006). Enablers (a tangible or intangible item or factor which facilitates SNP implementation) and barriers (a tangible or intangible item or factor which inhibits SNP implementation) have often been used as indicators of implementation success in these studies (Bauer, Patel, Prokop, & Austin, 2006; Dodson et al., 2009; MacLellan, Taylor & Freeze, 2009).

Another focus has been on policy existence, content and quality. Some researchers have examined the effect of legislation on content and quality of policies by collecting and analyzing SNPs (Metos & Nanney, 2007; Longley & Sneed, 2009). Other similar studies include: assessing accessibility and existence of SNPs, measurement of

policy implementation using a scale of 1 (no implementation) to 4 (full implementation); and one study collected SNPs and compared them to the US mandate to assess compliance (Chriqui, Tynan, Agurs-Collins, & Masse, 2008, Greves & Rivara, 2006; Probart et al., 2008).

Approach to Evaluation in Manitoba

In Manitoba, a systematic evaluation of SNP is currently underway. To achieve a comprehensive understanding of the impact and implementation of SNP, Manitoba researchers have been using a variety of methods, including: school planning reports, a series of quantitative surveys, SNP content analyses, and a communication analyses.

School planning reports.

Beginning in 2006, Manitoba Education Citizenship and Youth (MECY) set forth a requirement that elementary schools must report progress of the SNP initiative. Starting in 2007 secondary schools were also expected to file reports. The progress of SNP in schools was to be reported via the school plan which uses a 'checklist' style report format. The school plan is intended to provide meaningful information about SNP progress and is used as an indicator of compliance. Overall, the data suggests that compliance with the development of SNPs has been high and that most schools are utilising the support materials provided (Fieldhouse, 2010).

Quantitative survey.

Quantitative evaluation was used to monitor the components and assess the level of policy implementation. It allows for identification of changes to the school environment. A quantitative survey was administered to all schools in Manitoba in 2006 (prior to SNP implementation) and again in 2009. A comparison of the two surveys will be used to assess changes to food available in schools as well as changes to the school food environment after implementation of SNP. Results of the survey should be available in 2011, but preliminary analysis indicates there have been significant positive changes to the food environment in Manitoba schools (Seyidoglu & Fieldhouse, 2010).

Communication study.

The objective of this study was to determine if and how schools are making nutrition policies known to students, parents, staff and the community. During fall 2009 and spring 2010, researchers conducted a systematic scan of all Manitoba school division and school websites looking for nutrition policies and reference to nutrition policies. Researchers also examined where policies and reference to the policies are located on school websites. Possible locations include, within: newsletters, policy manuals, community reports, meeting minutes, school plans and school newspapers or posted directly on the site. Unique websites were located for 599 of 688 schools in the province. Results indicate that few schools [$<10\%$] featured a nutrition policy on their website. Of schools that did feature an SNP on their website: 30 featured their own unique SNP while 8 featured the divisional SNP. Over half of the policies on school websites were easily located because they were identified by labeled icons, while some were more difficult to

find since they were located within other documents on the website (Rutherford, Fieldhouse, Seyidoglu, & MacDonald, 2010).

Content analysis.

SNPs were developed independently by each school division using the *Manitoba School Nutrition Handbook* as a guideline. Researchers conducted an evaluation to identify which components have been incorporated into the SNPs. The evaluation involved a discreet examination of all 38 divisional SNP policies to identify the most and least common elements. It was found that, although length of individual policies vary markedly, almost all policies have included several components (mission statement, scope, purpose, procedures, and communication) while fewer have included plans for accountability. Of schools that included protocols, the most common elements included changes to fundraising, canteens and cafeterias, vending machines and defining nutritious food. Few SNPs included stipulations regarding: food packaging, local food or food waste (Rutherford & Fieldhouse, 2011).

Qualitative Methodology

Qualitative methodology is a form of research normally conducted within a community to achieve a rich and in-depth understanding of how realities and relationships influence perceptions of phenomena. It recognizes that society is a complex, multi-dimensional and uncontrolled environment and responses to phenomena can vary between individuals and contexts (Sofaer, 1999). This method empowers participants by enabling them to voice their perceptions which are used to gain insight into the issue. Qualitative data is recorded in a literary, personal and less formal voice as compared to

quantitative studies (Creswell, 2007; Ritchie, 2001; Sofaer). Also, contrary to quantitative research, this method begins with a broad question or problem, of which little is known, and attempts to generate an understanding (Creswell). Further differences between qualitative and quantitative inquiry, as described by Creswell, are summarised in Table 2.2.

Table 2.3: Qualitative versus Quantitative Methodology

Qualitative Method	Quantitative Method
Inductive- no hypothesis	Deductive - starts with hypothesis
Generates quotes	Generates statistics
The researcher is the tool	The survey or laboratory equipment is the tool
New ideas emerge	Examines preconceived ideas
Indicates how and why a change has occurred	Identifies to what extent a change has occurred
Commonly conducted in the field	Usually conducted in a lab or as a survey

There are various styles of qualitative research and a particular approach is chosen based on the goals of the study and the underlying assumptions of the researcher (Creswell, 2007). The most common approaches (summarized in Table 2.3) include: narrative (explores the life of an individual), phenomenological (seeks to understand a lived experience), grounded theory (strives to generate theory about a social phenomenon), ethnography (attempts to understand a phenomenon in a specific cultural context) and case study (aims to develop an in-depth description and analysis of a case or cases) (Creswell).

Table 2.4: A Comparison of Qualitative Research Approaches

	Phenomenology	Narrative	Ethnography	Grounded Theory	Case Study
What is the aim?	Understand a lived experience.	Explore the life of an individual.	Understand phenomena in a specific cultural context.	Generate theory about social phenomena.	Develop an in-depth description and analysis of a case or cases.
When is it used?	To describe the essence of a lived experience.	To recount an individual's experience.	To describe a cultures response to a phenomenon.	To generate a theory that is grounded in the views of participants.	To achieve an in-depth understanding of a case or cases.
What does it analyse?	Several individuals who have had a common experience.	One or more individuals.	A group with a shared culture.	A process or interaction of many individuals.	An event or program involving more than one individual.
What data collection tools are used?	Mostly interviews (documents and observations sometimes included).	Interviews and documents.	Interviews and observations.	Interviews.	Multiple sources (interviews, observations, documentation).

Adapted from Creswell, 2007, p.78.

These forms of qualitative inquiry have been used by various disciplines such as: social sciences, psychology, humanities, education, political sciences and history (Creswell, 2007). More recently, they have also been applied to studies in health and science (Ritchie, 2001). Qualitative methods have been identified as a valuable tool for policy evaluation and therefore may be useful for evaluating school nutrition policy (Sofaer,1999).

Quantitative methodology has been the predominant method used in SNP studies, however, qualitative SNP research is gaining recognition, but few studies have been undertaken in Canada. Often qualitative inquiries involve the use of multiple forms of data (e.g., focus groups, observations, documents) (Creswell, 2007). However, most qualitative SNP studies consist of interviews.

SNP studies repeatedly focus on one or two groups of key informants and the choice of informants is varied. Some national and international SNP evaluations have included interviews with administrators (Deek, 2006; MacLellan et al., 2009; McDonnell et al, 2006; Pobocik et al., 2007), food service directors (Besgrove, 2008; Longley & Sneed, 2009; Sherry, 2008), administrators and food service providers (Nollen et al., 2007; Roberts, Pobocik, Deek, Besgrove, & Prostime, 2009), faculty and staff members (Austin et al., 2006; Bauer et al. 2006), policy legislators and implementers (Brown et al., 2004; Dodson et al., 2009), students and parents (MacLellan, Holland, Taylor, McKenna, & Hernandez, 2010), or school district representatives (Greves & Rivara, 2006).

Several SNP researchers have documented varying perceptions between key informant groups. For example, a study by McDonnell and colleagues (2006), found that food service directors and principals had different perceptions concerning the impact and degree of implementation of SNP. Similarly, researchers in New Zealand found the insights of students (aged 15-16) differed from that of teachers and school health providers when discussing aspects of health and wellness in the school environment (Smith, Gaffney, & Nairn, 2004). This suggests that an accurate interpretation of the impact of SNP requires an understanding of multiple perspectives.

However, only a few studies have incorporated the perceptions of more than two key informant groups including: researchers in Nova Scotia who interviewed a variety of key players at the school, district and provincial level (McKenna, 2003); a study conducted in China incorporated perceptions of school administrators, teachers, parents and students (Aldinger et al., 2008); and a study in the United States integrated interviews

with students, staff and faculty (Bauer, Yang, & Austin, 2004). To address a greater understanding of multiple perspectives, a case study approach will be used for this study.

Assumptions and Theoretical Framework

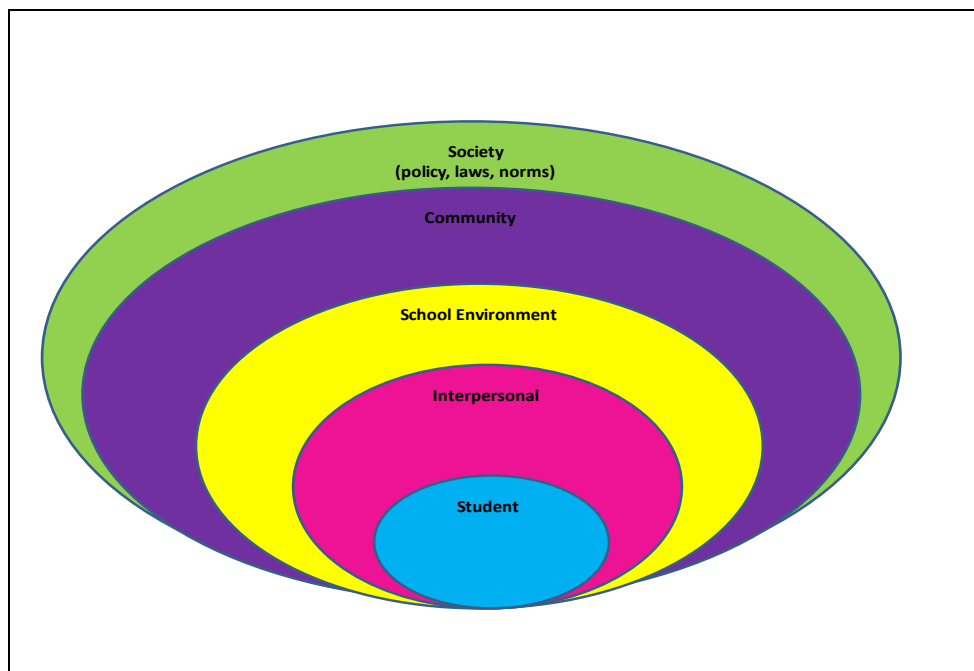
When a researcher chooses a methodology he or she makes an assumption about reality, the nature of knowledge and the researcher's role (Hathaway, 1995). Many of the general assumptions made by qualitative researchers have been discussed above (e.g., there are multiple realities and society is complex). However, even between qualitative researchers there are different ways of understanding the world (also referred to as paradigms or theoretical frameworks) which will impact the meaning one ascribes to the research and the type of study utilized (Creswell, 2007; Hathaway).

It is important to be explicit about the underlying assumptions that will shape a research study in order to familiarize the reader with one's theoretical lens (Creswell, 2007). In this study it is assumed that reality is subjective, key informants will have differing viewpoints, and that these viewpoints are impacted by complicated interactions between the individual and the multiple layers that comprise his or her environment.

In accordance with these assumptions, this study has been based on a belief that a comprehensive SNP evaluation must not only address the individual; it must also consider the impact of interpersonal relationships, the physical layout of the school and the relationship between the school and the broader community. A theoretical framework called the Socio-Ecological Model (SEM), which addresses these assumptions, will be used to guide this study (Gregson et al., 2001).

According to the SEM, an individual's behaviour is influenced by their environment which is multi-layered. These layers are termed 'spheres of influence' and to fully comprehend a phenomenon the influence of each layer must be considered. There are five spheres addressed in the SEM and each can be associated to aspects of this study (Figure 2.1). The spheres starting from the smallest and expanding out are: the individual (the student), interpersonal (the interaction between key informants within the school), the institution (school environment), community (economic status and resources available in a community), and society (policies, laws and norms) (Gregson et al., 2001). Keeping in mind the SEM during the interview, analysis and discussion phase of this study will help to create a holistic interpretation of the impact of SNP.

Figure 2.1: Socio-Ecological Model and School Nutrition Policy



Adapted from Gregson et al., 2001, p.S5

Qualitative Case Study Approach

To assess implementation and impact of SNP, this evaluation will use a qualitative case study. This method can be used to achieve an understanding of the process or perception of an issue within a bounded system (a case) using extensive data collection techniques from multiple sources. A bounded system includes anything (usually people, programs or places) that have clearly definable borders (Ghesquière, Maes, & Vandenberghe, 2004; Yin, 2003). This approach is useful when a bounded system is easily identifiable and in-depth information is desired as it enables an examination of the system (case) and its relationship and interaction with the broader environment (i.e. spheres of influence) (Stake, 1995). A comprehensive review of school nutrition literature yielded few studies that use a qualitative case study approach. No instances were located in which this method has been used to evaluate SNP however; one study in China used a quasi-case study method to assess the impact of a school nutrition program (Aldinger, et al., 2008). Hence, it appears that this approach is relatively novel to the area of SNP and using this approach could introduce a new evaluation methodology for gaining a holistic understanding of SNP.

CHAPTER III: METHODOLOGY

The Setting

As discussed in the previous chapter, each school division in Manitoba created its own SNP using the *Manitoba School Nutrition Policy Handbook* as a guideline. It is important to select schools from within one school division to ensure that the SNP is the same for each of the schools, allowing for comparison. This also limits the number of gatekeepers that need be approached to gain access to schools. To assist with the collection of rich, in-depth data a school division with a comprehensive SNP and that has been supportive of the SNP initiative was identified. For ease of data collection it was desirable that the school division be located within the city of Winnipeg, Manitoba.

To identify such a division the advice of colleagues who were familiar with SNP and Manitoba school divisions were solicited including: the Child Nutrition Council of Manitoba (CNCM) (a multi-disciplinary group of professionals concerned for the nutritional welfare of children in Manitoba), two members of Manitoba Health and Healthy Living (now called Manitoba Healthy Living Youth and Seniors [HLYS]), and five members of Manitoba Citizenship, Education and Youth (MECY). Based on the input given by CNCM, HLYS and MECY a school division that met these criteria was identified.

After identifying the target division, the number and type of schools to be included in this study were then determined. Creswell (2007) suggests that a collective case study should include no more than four or five cases (schools) since the more cases one incorporates the less depth is achieved. It was also important to maintain a

manageable amount of data to be analysed. Thus, this study included three schools: two elementary schools, one from a lower socioeconomic catchment and one from a more affluent community, and one secondary school.

School catchment areas were established using the School Division website (the division website has not been referenced in order to maintain confidentiality). The school catchment areas were then matched to the neighbourhoods used in the *2006 Census* (City of Winnipeg, 2009). The neighbourhoods incorporated slightly more area than the school catchments thus, there may be some skew in this data. The incorporation of schools from different socioeconomic catchments is in accordance with the Socio-Ecological Model (SEM), which suggests that external factors, such as social economic status of a community influence interactions of key informants. The inclusion of a secondary school will allow for understanding of the impact of SNP on all grade levels. It is important to note that two secondary schools will not be used in this study because there are a limited number of secondary schools in each school division in Winnipeg. Thus, it can be difficult to obtain two schools in one school division while maintaining confidentiality.

After identifying a target school division and the type of schools desired, a meeting with the Assistant Superintendant was arranged to discuss the goals and methodology of this study. Access to schools was subsequently granted after a formal request and proof of ethical approval from the University of Manitoba had been submitted to the school division. The assistant superintendant agreed to identify and approach three schools that fit the criteria and would be willing to participate. Thus, based on the criteria, she provided a list of three schools that would form the cases for this study. Subsequently, (after ethics approval was obtained from the University of

Manitoba) the administrators of the three participating schools were contacted individually by the researcher to obtain access at the school level. Once the administrators granted access, field work commenced.

The Sample

The sample comprised parents, teachers, students, administrators, custodians, school food service operators and education assistants from each of the 3 participating schools for a total of 76 participants. Participation was voluntary and no rewards and incentives were provided except when lunch was provided for teachers and EA's who participated in focus groups that occurred during the lunch hour. This was to compensate them for participating during break-time. For most key informant groups the only recruitment criteria was they had to be staff working within, or parents of children attending the specified school. The only exception was for the student focus group. In the elementary school it was requested that the student focus group contain two students from each of grades five to nine and for secondary school, two students from all grades. The approach taken to recruit participants varied between key informant groups, with the administrators found to be integral gatekeepers in this process. Table 3.1 is an overview of the recruitment process (detail regarding focus group attendance can be found in Appendix 7.1).

Table 3.1: Participant Recruitment Process

Key Informant Group	Steps taken to recruit participants	Person responsible for initial recruitment	Time schedule of focus groups and interviews
Administrator	<ol style="list-style-type: none"> 1. Superintendent made initial contact with administrators. 2. Researcher telephoned administrator to arrange interview. 	Superintendent	<p>School One: Morning during class time.</p> <p>School Two: Morning during class time.</p> <p>School Three: Afternoon on an in-service day (no class).</p>
Teachers	<ol style="list-style-type: none"> 1. Administrators in each school e-mailed a request for participation to all teachers. 2. Teachers who indicated willingness to participate were subsequently contacted by the researcher. 3. The researcher attempted to schedule a meeting time with teachers (scheduling a time to meet was difficult, most teachers were only available during the lunch hour and many teachers were reluctant to participate during the lunch hour). <ol style="list-style-type: none"> i. In <i>school One</i> (the first school in which informants were recruited) an e-mail indicating that the researcher would provide lunch to participants was sent to all teachers after which 	Administrator	All schools: during the lunch hour.

	<p>additional teachers indicated willingness to participate.</p> <p>ii. In <i>schools Two and Three</i>, provision of lunch was indicated on initial e-mail.</p>		
Education Assistants	<ol style="list-style-type: none"> 1. Administrators in <i>Schools One and Two</i> contacted EA's via e-mail. 2. EA's replied to the administrators and administrators organised a meeting time. 3. The administrator in <i>School Three</i> included the focus group as part of the EA in-service schedule so all EA's were requested to participate (this is the only instance where participation was not completely voluntary). 	Administrators	<p><i>Schools One and Two</i>: Lunch hour (lunch was provided by researcher)</p> <p><i>School Three</i>: Morning on an in-service day.</p>
Students	<ol style="list-style-type: none"> 1. The researcher indicated the age, gender and number of students required. 2. Administrators e-mailed the appropriate teachers (i.e. grades 5-8 in elementary and all grades in secondary) to request participation of two students from each grade. 3. Teachers selected students to participate. Selection was solely based on teachers' discretion. 4. Students were required to provide parental consent forms prior to participation (parents were provided 	Teachers	<p><i>Schools One and Three</i>: During class time in the afternoon.</p> <p><i>School Two</i>: Lunch hour during the recess period (after students had opportunity to consume their lunches).</p>

	researcher's contact information on consent form. No parents contacted the researcher).		
Parents	<p>1. In <i>School One</i>, the administrator added the focus group to the Parent Council association (PAC) meeting agenda. After the PAC meeting, parents willing to participate were asked to remain (all but one parent stayed for the focus group).</p> <p>2. In <i>School Two</i>, locating parents willing to participate was difficult. Recruitment included the following:</p> <ul style="list-style-type: none"> i. Administrator spoke directly to parents when they arrived at school to drop off or pick up their children (no volunteers came forward) ii. The researcher attended the weekly special event night, organised by PAC, to solicit participation (no volunteers came forward). iii. The researcher called 4 parents (a call list of parents, usually willing to volunteer, was provided by administrator) to solicit participation (two parents indicated willingness to 	Researcher	<p><i>School One:</i> Evening, after PAC meeting.</p> <p><i>School Two:</i> Morning, during class time.</p> <p><i>School Three:</i> Early evening, prior to choir recital.</p>

	<p>participate).</p> <p>3. In <i>School Two</i>, finding parents willing to participate was difficult. Recruitment included the following:</p> <ul style="list-style-type: none"> i. The researcher attended the monthly PAC meeting to solicit participation (2 parents volunteered but later retracted the offer). ii. The administrator attempted to recruit at the Parent Music Council meeting (no volunteers came forward). iii. The administrator sent an e-mail to parents who had their names on a list serve (no parents volunteered). iv. The administrator contacted music council a second time (via e-mail) and parents attending a choir event indicated they would be willing to show up early to the event to participate (In actuality only 2 of 6 parents showed up to the focus group). 		
Custodians	<p>1. Initial contact made in-person, by administrators.</p> <p>2. Secondary contact made by researcher to schedule meeting time.</p>	Administrator	All Schools: During class time

Food Service Operator	1. Contact and scheduling made by administrator via e-mail.	Administrator	<p><i>School One and Two:</i> During class time.</p> <p><i>School Three:</i> Cafeteria open all day so interview had to occur while operator was working.</p>
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Study Design

Case study research involves the use of multiple forms of data collection in order to achieve an in-depth understanding of an issue. In this study three techniques for data collection have been utilised, including: one-on-one and focus group semi-structured interviews, observations and documentation. Any conclusion derived from a case study is more credible if derived from multiple sources of data because achieving similar results using various data collection techniques can help to corroborate findings, often this is referred to as triangulation (Yin, 2003).

One-on-one interviews.

A semi-structured interview is composed of a few open ended ‘grand tour’ questions that introduce the main areas needing to be explored (Leech, 2002). This approach is useful when the researcher has specific areas he or she wishes to investigate. The use of only a few grand tour questions ensures that the interviewee has the ability to answer the question and carry the conversation to what is important from their perspective. For each question the researcher has a list of probes that are useful to bring

the interviewee back on topic if he or she digresses. Probes are also used to garner more in-depth information, and to request clarification (Barriball, 1994).

For interviews to be successful the questions must be limited in number and must be worded in a way that elicits an open and unscripted response (Stewart, Shamdasani, & Rook, 2007). Questions from other SNP studies that used similar interviewing techniques were adapted for this study (Besgrove, 2008; Deek, 2006). Interview and focus group scripts differed slightly between key informant groups in order to address the specific situations of each group (Appendix 7.1-7.6).

Prior to conducting the interviews the questionnaires were tested for clarity (i.e., do the informants understand the question?) and face validity (i.e., does it look like the questions are going to measure what they are intended to measure?) using an older student, a teacher, a school staff member and three lay people chosen by the researcher based on availability. These people were not from the target schools, rather they are people known by the researcher. Feedback regarding the clarity and validity of questions being asked was provided and used to adapt the interview scripts.

As previously mentioned, one-on-one interviews were conducted with individuals who could not be incorporated into focus groups because there were only one or two people in each position within the school and focus groups require 5 to 10 participants. This situation applied to administrators, custodians and canteen operators. In all three schools the administrator interview was conducted with the principal of each school (for which there was only one in each school). The elementary schools had only one custodian and therefore they were the custodians interviewed. In the secondary school

there were two custodians, the custodian responsible for school waste was interviewed. In all three schools there was only one cafeteria operator employed (one elementary school also had volunteers and in the secondary school one employee had recently left the position) and each operator agreed to be interviewed. Three interviews were conducted at each school, for a total of 9 interviews. Discussion with administrators lasted an average of 30 minutes and interviews with canteen/ lunch supervisors and custodians lasted an average of 15 minutes. Other school nutrition policy studies included interviews of a similar length (Dodson et al., 2009; Roberts, Pobocik, Deek, Besgrove, & Prostine , 2009). As indicated, schools are very time sensitive institutions so, the duration of interviews needed to respect time restraints of interviewees.

Each interview occurred in an office with only the interviewer and interviewee present, with the exception of the secondary school cafeteria operator who was unable to leave the cafeteria: this interview was held in the kitchen area of the cafeteria. Interviews closely followed the interview scripts (appendix 7.1-7.3) and were recorded using two hand-held digital recorders. After the interviews, the researcher recorded audio field notes such as room layout, and non-verbal reactions of the interviewee.

Focus groups.

A focus group is a group interview that relies on interpersonal interaction. Participants are encouraged to comment and respond to other participants' statements and this has been found to yield rich, in-depth information. This technique is also useful to capture other forms of communication such as joking, teasing and non-verbal responses between groups members which are recorded as field notes and used to understand

context when analysing findings. Focus groups are also beneficial because they can be used to collect data from multiple people simultaneously (Kitzinger, 1995). For these reasons, focus group interviews have been used in this study.

The principles of question selection, described in the ‘interview’ section, were also applied to the content of the focus group interview script. When forming focus groups, participants were divided according to ‘role’ (i.e. teachers, students or parents). In each school, potential key informant groups included: administrators, custodians, food service operators (FSO), education assistants (EA)/lunch supervisors, parents and students. Combining groups (e.g., teachers with administrators) could cause a power struggle dynamic and the researcher wanted to compare and contrast the opinions of various groups, so it was important that each key informant group be interviewed separately.

Four focus groups were conducted within each school for a total of 12 focus groups. Informants included; parents, students, teachers and lunchtime supervisors/educational assistants (although focus groups were preferred, some interviews were substituted due to respondent availability issues [e.g., administrator, custodian, and food service operator]). Focus groups took place in a quiet room (e.g., classroom, staff room, and library) and with one exception no non-participants were present. (For the focus group that occurred in the library the librarian was present but was not within range of the conversation.) All participants were seated in a circle around a small table and the focus group was recorded using two digital recorders (one on both ends of the table). Prior to commencing the discussion, participants signed a consent form and oath of confidentiality (students also provided parental consent), the purpose and behavioral

expectations (i.e., confidentiality, respect, and honesty) were discussed, and participants were provided the opportunity to ask questions. Once questions were answered the recorders were turned on and the researcher commenced with the interview script (appendix 7.4-7.6). For ease of transcription, participants were asked to state their name prior to speaking during the focus group. During the first focus group it proved difficult for the researcher to remember participants' names so for remaining groups, participants were given name tags so the researcher could refer to them by name. To capture non-verbal communication and to manage disruptions a co-facilitator attended each focus group. She recorded field notes but did not actively participate in the focus group discussion.

Ideally a focus group should consist of between 5 to 10 members (Kitzinger, 1995). However, in the complex reality of schools it was sometimes difficult to obtain 5 to 10 participants. Various measures were taken to recruit parents for the parent focus groups however, it was very difficult to recruit the minimum number of five participants. After rigorous recruitment efforts the researcher was able to recruit only two parent participants from the school with the smallest population. In the secondary school six parents indicated willingness to participate but in actuality only two parents attended the focus group. Parents in both schools indicated time constraints as the primary barrier to participation. For the remaining focus groups, all recruited participants took part. In the school with fewer than two hundred students, there were fewer than five EA's and ten teachers within the school and not all informants were willing or able to participate, therefore, these focus groups were also smaller than the desired minimum number of five. With the exception of the parent focus groups, membership varied from 3 to 10 with a

median of 7 participants (Appendix 7.0). According to Krueger and Casey (2000), 3 to 4 groups with one type of informant is usually the point in which saturation (ideas begin to repeat themselves and no new ideas are emerging) can be expected to occur. In this study, by the third focus group within each school new major concepts had ceased to emerge.

As with any data collection tool, there can be problematic issues when using focus groups. For example, some members may dominate the discussion, confidentiality could become compromised, or some participants may not wish to express views that oppose general consensus (Kitzinger, 1995). In this study, these challenges were controlled by actively encouraging participation of quieter individuals (e.g., specifically asking them if they have anything they would like to add), creating a safe environment to share ideas and expressing the importance of maintaining confidentiality.

During each interview and focus group, internal member checks were conducted after each new idea that surfaced. This was accomplished by paraphrasing and interpreting what had been said and requesting verification or clarification. Examples of internal member checks taken from this studies' focus groups include; "So one of the things that I think I'm taking home from all this is that education is a very important component of any..." and "So what I'm hearing is that awareness and communication could be...". Internal member checks serve to clarify and corroborate the researcher's interpretation of what participants are conveying (Krueger, 1998).

Observations.

Observations are another important component of case study methodology. They provide insight into the way groups interact around food such as: student eating habits, adults as role-models for students and group interactions at meal time. They also allow the researcher to understand the context in which the informant exists, thus, assisting with interpretation of information provided by informants. In addition, observations provide a way of examining the influence of the schools' physical environment on child nutrition (Bonner & Tolhurst, 2002; Mulhall, 2003).

Within each school, non-participant researcher observations of activity in the lunch rooms, cafeteria, hallway, and the schoolyard were conducted. Observations occurred during April and May 2009. Four hours per day were spent conducting observations for a total of 40 hours over two weeks in each school (a total of 120 hours over six weeks). The hours were staggered (i.e., day one observations occurred from 9:00 to 1:00, day two from 12:00 to 4:00, day three from 9:00 to 1:00, etc.). During recess, lunch hour and before and after school the researcher visited the areas of the school occupied by students and recorded information of student and staff interactions, student lunch consumption and canteen/cafeteria purchases. During class-time the researcher mapped the layout of the school, documented instances of nutrition related material in the hallways, and collected documentation. Field notes regarding the schools physical layout as well as group interaction around food were made using a hand held digital recorder and later transferred to a word document. These observations formed the basis of the description of the schools and assisted with researcher interpretation of interviews.

Documentation.

The rationale for collecting documentation is to confirm and enhance findings from interviews and observations (Yin, 2003). It may also provide information that has been overlooked. Any conclusion derived from a case study will be more compelling if derived from multiple sources of data (Yin). Documentation obtained from the school websites included: bulletins, newsletters, information about pertinent school policies and programs. Documentation obtained within the school included: menus and price lists, and pertinent school program and policy information. Also, during observations the physical layout of schools were mapped and vending machines contents were documented. Documentation including menus, map of school layout, and vending machine contents were used when creating a description of each school. Menus, the school website, and information about the school catchment area were used to corroborate information provided by participants.

Ethics

Confidentiality is important in qualitative research. In this study confidentiality was maintained on three levels. The name of the division and the schools were and will not be disclosed. In this report a detailed description of the three cases (schools) has been provided, however, information that could lead to potential identification has not been included. Furthermore, in this report the division and schools have been referred to as “two elementary and one secondary school within Winnipeg”. All informants’ names have been omitted and any quotes that could lead to potential identification have not been included. Informed consent and oaths of confidentiality were collected from all

participants and students were required to provide parental consent (Appendix 7.7-7.9). Ethics approval was provided by the University of Manitoba Joint Faculty Human Ethics Review Board, prior to commencing data collection.

Data Entry

Transcription.

Interviews and focus groups were audio recorded and transcribed verbatim. The researcher transcribed the nine one-on-one interviews and, due to time constraints, the twelve focus groups were transcribed by a professional transcriptionist. Transcripts were then checked for accuracy (interviews were checked by the focus group co-facilitator and the focus groups were verified by the researcher).

Observation logs.

During observations, comments were recorded onto a digital recording device and later transcribed into field notes. Also, during interviews field notes about the environment of the room and the non-verbal communication of the interviewee were recorded. During focus groups, observations of the environment, non-verbal actions and interpersonal interaction were documented by the co-facilitator. These observations were combined to form the field notes for this study. Included in the results chapter of this thesis is an in-depth description of the context of each case which has been developed using the field notes and documents collected at each school.

Data Analysis

During a case study the data collection and data analyses stages occur simultaneously. Thus, during and after the data collection stage, data analyses procedures were also being conducted. It is important for these stages to occur simultaneously in order to determine if data saturation (no new ideas are emerging from data collection) is being achieved (Creswell, 2007).

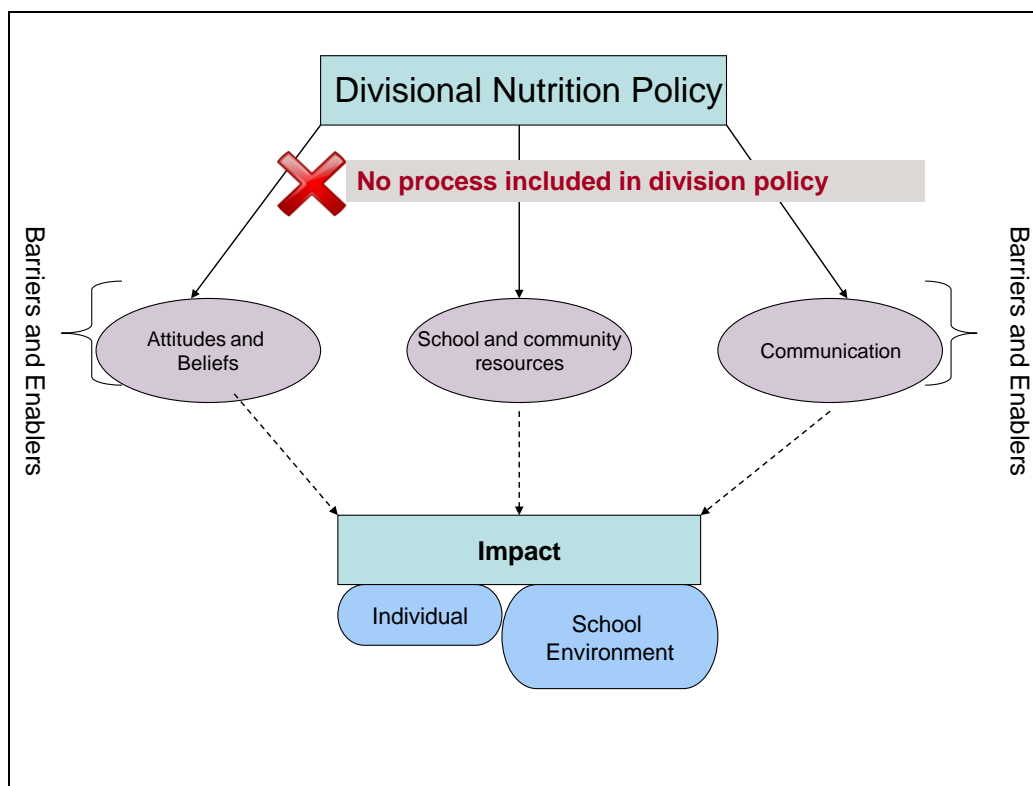
Coding of cases 1, 2 and 3.

After transcription, data was coded to derive themes. All transcripts were first printed and coded by hand to derive preliminary themes (i.e., the main idea of discreet portions of the interview and focus group scripts are identified and labeled accordingly). After this stage, a sample of transcripts was submitted to a member of the advisory committee for corroboration of coding. Next, the transcripts were coded and merged into themes using NVIVO 8[®] software to help organise the data (i.e. the labeled portions of text were grouped into larger categories). After themes were derived for each separate case, cross case analysis was conducted to look for similarities and differences between cases. The two elementary schools were cross analysed and then compared to secondary school themes. This was completed ,using Nvivo 8[®] , by identifying and isolating themes that were common to the elementary schools as well as those that were unique to the secondary school. Once cross case themes were complete some assertions and generalizations were derived.

CHAPTER IV: RESULTS

This chapter will begin with a description of the divisional school nutrition policy followed by an overview of themes derived from this study (Figure 4.1) and a detailed discussion of themes and sub-themes for each of *School One*, *School Two*, and *School Three*. Next, a cross-case analysis will be presented including: a brief examination of similarities and differences related to social economic status and type of school (elementary or secondary) as well as experiences common to all schools. Finally, a concept map will be created by placing themes and sub-themes into the socio-ecological model (SEM). This will assist in determining in which sphere of influence barriers may be located and will help to create an understanding of how and at what level, support needs to be provided.

Figure 4.1: Overarching Themes in SNP Implementation



Description of Division School Nutrition Policy

All schools in this study are from one school division within the city of Winnipeg and they follow one nutrition policy. The policy was extensive compared to other divisional SNPs in Manitoba (Rutherford, & Fieldhouse, 2011). It incorporated several measures from sample SNP's provided in the *Guidelines for Foods Available in K to 12 Schools in Manitoba* (Manitoba School Nutrition Handbook, 2006, pp 9-22). It also directed all schools to follow the guidelines from the handbook, including those not mentioned specifically in the divisional policy.

At four pages, the SNP was lengthy compared to most Manitoba SNP's and in many instances the reader was referred to other documents including *Guidelines for Foods Available in K to 12 Schools in Manitoba* (Manitoba School Handbook, pp 9-22) and other relevant policies in the divisions policy manual (e.g., fundraising policy), requiring the use of additional documents to understand the SNP. Several times the reader was also referred to other sections of the nutrition policy, for example, one section states: "please see procedure F". Thus, requiring the reader to flip back and forth rather than reading the policy from beginning to end.

The type of language used in an SNP is an important consideration when assessing implementation. SNPs may use 'weak' language (e.g., if desired, when possible, is encouraged, should, suggest) which implies a policy guideline is optional but not compulsory, or they can use 'strong' language (e.g., shall, will, must, required) which indicates that a guideline is mandatory (Metos & Nanny, 2007). Many of the guidelines in this policy employ weak language, as evidenced in the follow excerpts: "schools are

encouraged to...”, “*when possible...*”, “*schools should...*”, “*practices should refrain from...*”. On the other hand, there were some instances where strong language was used, for example, changes to the vending machines stated “*thou shall offer [sic]...*”. The type of language used for specific guidelines appears to impact the extent to which they were implemented in the schools. This will be explored further in the discussion chapter.

Process: The missing link.

This division’s SNP did not contain stipulations concerning how the policy was to be implemented. In regards to procedures, it contains many general statements such as “Pricing practices for foods sold in schools shall encourage students to select the healthiest of available options”. Such statements express a desired outcome but provide no indication of how the schools shall meet this demand or the time frame for achieving this goal thus, leaving the SNP open to interpretation by each school. The concepts of perception, interpretation, and variation surfaced multiple times during this study.

Overview of Themes and Sub-Themes

Themes for this study were divided into barriers/enablers and impacts. Barriers/enablers include: attitudes and beliefs, school and community resources, and communication. Impacts include changes to the school environment and changes to the individual. Sub-themes (smaller categories that fit under each theme) were also identified and have been summarised in Table 4.1. Some sub-themes were common to all schools but, many were unique to each school. An introduction to the main themes for this study is presented below.

Barriers/enablers.

Observations and interviews revealed many barriers and few enablers to implementing SNP in schools and this appears to affect the degree and type of impact of the initiative. Identifying obstacles is an important step to understanding implementation of SNP. By providing the proper support, barriers could be transformed into enablers of implementation, hence the reason why they have been identified as barriers/enablers in this study. They are: attitudes and beliefs, school and community resources and communication.

Several key informants demonstrated negative or apathetic attitudes toward nutrition and/or SNP which appeared to hinder successful implementation of some guidelines. As will be discussed later, attitudes and beliefs are shaped by perception of the SNP, outside influences and personal values of nutrition. Achieving an understanding of attitudes and beliefs and where they come from is important for determining how positive attitudes can be fostered.

Another barrier to SNP implementation is lack of school and community resources. The adequacy and quality of resources available within the school (e.g., lunchrooms, areas for food storage, and type of food services available) and in the surrounding community (e.g., access to grocery stores, fast food restaurants and convenience stores) served as obstacles to successful implementation of SNP. Identification of these obstacles will pinpoint environmental changes that need to occur.

Not all schools were successfully communicating existence of the SNP. Several key informants indicated no knowledge of the existence of SNP, some were familiar with one or two aspects of the policy, while few could identify multiple aspects. Lack of

communication about the SNP initiative served as a barrier to success because if key informants are not aware then they cannot participate in implementation.

Impacts.

As will be discussed in detail in the next chapter, the degree of impact is influenced by the number and severity of barriers that exist. Impacts include changes to the school environment and to the individual. The latter refers to transformations that have occurred internally (e.g., awareness, and behaviour). In Figure 4.1, change to the environment is depicted as a larger oval because this study revealed more changes to the environment than to the individual.

Impacts to the school environment encompasses changes that have occurred within the school as a result of the SNP initiative. These might include changes to: food sales, the curriculum, and length of the lunch period. Interestingly, these were often the first impacts cited during interviews, the importance of which will be highlighted in the discussion chapter.

The second theme relates to changes internal to the individual. Potentially, these could include physical (such as reduced obesity), cognitive and behavioural. In this study, changes included increased awareness and, to a lesser extent, altered behaviour.

Interestingly, in addition to students, it was suggested, the SNP initiative improved awareness for other groups of key informants within the school.

Table 4.1: Summary of Sub-Themes.

Theme	Sub-Theme	School(s)
Barrier: Attitudes and Beliefs	Role-modeling: Negative attitude toward the requirement of teachers to role model healthy eating behaviours.	One & Three
	Beyond our control: A belief that maintaining child nutrition is beyond the control or capacity of schools.	Two & Three
	Time constraints: A belief that parents, staff, and students are faced with time constraints that limit their ability to procure, prepare, and consume healthy food and to enact components of the SNP.	All schools
	Initial reaction: A negative reaction toward the SNP when it was first introduced.	One
	Enforcement of SNP: A belief that degree and mode of enforcement varies between and within schools in the division.	One & Two
	Change takes time: This was a reason provided for only few impacts occurring as a result of the SNP initiative.	Two
Barrier: School and Community Resources	Affordability of food: Low socio-economic status (SES) of families in inner-city meant less money to spend on food.	Two

	Access to food: Limited access to affordable groceries in low SES community.	Two
	Single-parent households: Many single parents in <i>School Two</i> neighbourhood. Single-parents faced with additional barriers to food procurement.	Two
	Peanut-butter ban: Allergy policy banned peanut-butter in schools. Peanut-butter a staple food for many parents in <i>School Two</i> .	Two
	Storage capacity of school: Limited fridge space to store fruits and vegetables.	Two
	Proximity of fast-food: Fast-food restaurants and convenience stores located nearby the school.	Three
	School food service: Food service not offering a sufficient selection of nutritious food.	Two & Three
	Limited exposure to healthy food: Children in low SES community not familiar with many nutritious foods (e.g., fruits and vegetables).	Two
Barrier: Communication	Limited: Communication about SNP was found to be lacking.	One & Two
	Difficult: Communicating the SNP to transient families was difficult (time limits & amount of information to be conveyed during intake meetings).	Two

	Selective: The administrator determined which components to communicate to each key informant group.	One
	Initial: The SNP was actively communicated when first enacted but little communication has occurred since.	One
Impact: Individual	Awareness: Informants are more aware of the importance of healthy foods and which foods are nutritious.	All schools
	Behaviour: This includes changes to food choices, academic outcomes, attentiveness, attendance.	One
Impact: School Environment	Food Sales: Changes to food sold in canteens, cafeterias, for fundraising and elsewhere within the school setting.	All schools
	Nutrition in the classroom: Changes to discussion about food and SNP	Two
	Offering healthy choices: Healthy foods being offered in addition to traditional treats for celebrations.	Two
Non-impact: Behaviour	Throwing food in garbage: Informants identified students throwing some lunch foods in the garbage as an important undesirable individual behaviour that had not been altered by the SNP initiative.	One

Description of Case One (School One)

The school used to form Case One (and will be referred to as *School One*) is an elementary school located within the city of Winnipeg in the province of Manitoba Canada. The school has between 400 and 500 students, primarily Caucasian, from kindergarten to grade 8 and is located in a middle-class suburban neighborhood. Many of the children live within walking distance to the school while few take the bus.

Approximately 60 to 70% of students leave the premises at lunch time. After researcher observations of the only fast-food restaurant located within reasonable walking distance to the school it was found that the majority of students who leave the premises at lunch did not make habitual use of the local fast-food restaurants. Additionally, approximately 100 to 150 students remain at school for lunch on any given day and attendance is always taken.

Children who stayed at school were given 20 minutes to eat their lunches before continuing outside for recess. They consumed their lunches in various lunch rooms: Grades 1 through 3 ate in their designated classrooms, grades 4 to 6 dined together in the gym, and grades 7 and 8 dined in one of the junior high class rooms. Each lunch room occupied by children grades 1 to 3 were monitored by a student from the senior grades and remaining lunchrooms were monitored by adult supervisors.

The school was equipped with one beverage vending machine, located in the main hallway which was accessible to all people in the school throughout the day. The drink machine contained bottled water (\$1.25), canned unsweetened apple juice (\$1.00) and canned unsweetened orange juice (\$1.00). The school was also equipped with a small

canteen which, during observations, was not widely used. The canteen operator has asserted that the canteen is intended to supplement students' nutritious lunches brought from home. In addition to the school environment, the surrounding community can also impact SNP implementation. Thus, it is important to consider the socioeconomic situation of the communities in which the schools in this study are located. Table 4.2 highlights some demographic information of *School One's* neighbourhood.

Table 4.2: Demographic Information for *School One* Catchment Area^{1,2}

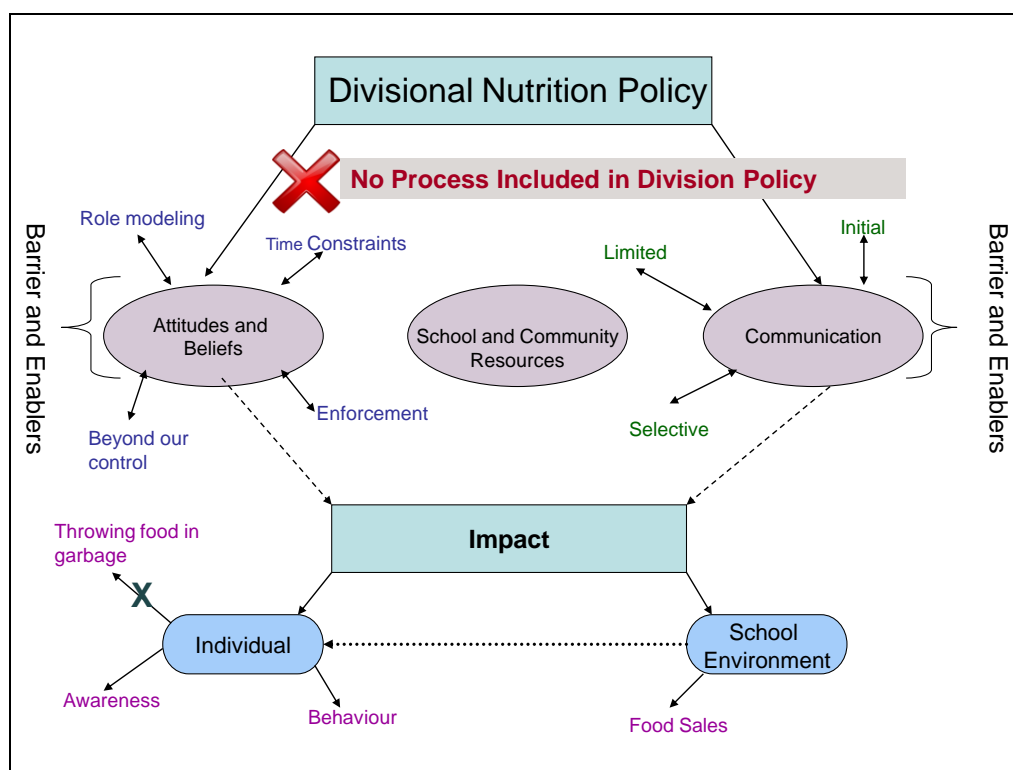
Demographic	% of Community Population
Visible Minority	14%
Immigrant	2%
Transportation = Car, van, truck as driver	76%
Marital status= divorced	7%
Unemployment rate	4%
Household median income	~\$71,000
One parent (female) households	14%
One parent (female) households that are low-income	13%
Dwellings that are owned	87%
Dwellings that are rented	13%

1. Data has been rounded off in order to protect identity of schools. 2. All data obtained from 2006 Census (City of Winnipeg, 2009).

Themes: School One

Figure 4.2 summarises themes derived in *School One*. These are categorized into those that function as barriers/enablers as well as those that are impacts of implementation. Sub-themes specific to this school, have also been identified and are depicted using two-way arrows.

Figure 4.2: Model of *School One* Results



Theme 1: Attitudes and beliefs.

Informants' reactions depended on personal beliefs and attitudes toward the policy. If an informant believed that the initiative was worthwhile they tended to have a more positive reaction toward the SNP. On the contrary, if an informant was either indifferent toward or opposed to aspects of the initiative they generally had a more

negative reaction to those components or to the overall policy. Personal values concerning nutrition also seemed to impact attitude toward the policy. Topics related to negative attitudes, in *School One* include: initial reaction to SNP implementation, reaction toward having to role model, belief that time constraints inhibit achievement of SNP goals, and concerns about differing levels of policy enforcement.

Initial reaction refers to the reactions of various key informants when the policy was first enacted. It was indicated that teachers had a particularly negative primary response to the SNP initiative, as illustrated by one parents recollection: “I remember when the ahh, the policy first came in and my kids came home from school and said, ‘my teacher wasn’t very happy about being told what she could serve, so she gave us donuts today’.” This sentiment was also expressed during the teacher focus group, for instance one teacher recalled his reaction when the School Board asked staff members to role model healthy eating behaviours: “And after I heard that message, I almost felt like bringing in a McDonald’s...”.

Resistance was viewed as a normal initial reaction to policy by most key informants. For example, the administrator argued: “... you know people always tend to overreact to things... that comes with anything new.” Similarly, one teacher explained:

Well I think what, whenever there is change you always get those protesting people who are going to bring the donuts or whatever and, and I agree. I mean we have the right to choose, umm but I even look back at my kids, some of which there was a couple in high school, there’s one in early years and their menus changed what was offered in canteen. And of course they came home in an

uproar and I think that's just normal people get uptight... But, it's not, it's a non issue for every one of them.

The administrator indicated that most people have gradually become accustomed to the changes:

Those are the objections that people raised and of course, uh, some of them, uh, you just have to weather and say be calm it'll be all right we'll work through this...no, I don't think that it's [attitude toward the policy] ... anywhere near as strong as it was...

Key informants viewed initial resistance to change as a normal phenomenon and they believed that gradual acceptance of the SNP would occur. However, some opposition to policy components still remained and this includes negative attitudes towards role-modeling.

Role-modeling.

Some teachers expressed irritation toward the requirement of role-modeling appropriate nutritional behaviour. This policy component was aimed primarily at the teachers therefore, it was during their focus group that this concept largely surfaced, however, it was also mentioned by the administrator and parents. Several teachers expressed a belief that the requirement to role model extends beyond their duties as educators: "What I choose to put in my body or not put into my body is my business. ...So, yes we can limit sort of what's available in the schools, but it stops at expecting and demanding me to model." Some teachers also felt that role-modeling infringed on their rights: "...I almost felt like bringing in a McDonald's... Because you know they

were trying to tell us what we can eat and... You know you can't even tell a doctor what they can eat...”, another teacher added “From a bargaining perspective...they have no right.” One teacher further explained: “... I strongly believe in the individual and the individual's rights to choose. And what I choose to do is my choice and what a parent chooses to do with their child is their choice.”

Although many teachers believed that role-modeling was beyond the scope of their duties, some teachers thought that role-modeling was essential. One teacher affirmed:

I do agree that you know, you don't want to infringe upon another person's right, however having said that, I also think that we are role models and that we do need to sort of walk the walk if we are going to talk it...

Another teacher stated:

How many hours are you away eating, you can do what you want, but if I'm going to be here and I've got this big coke on my desk every single day or I come in with McDonald's like, I just think that just sets, it does send a poor example.

Other key informants also believed role-modeling to be an important component of the SNP. According to the administrator “... modeling, that has been really worthwhile. I think that's one of the best things about the, the way the policy has rolled out at our school anyway.” Teachers in *School One* appeared to be divided on the topic of role-modeling. Interestingly, some of the teachers who supported role-modeling also indicated that they personally value nutrition.

The importance of peer to peer modeling also surfaced in this school. Key informants indicated several instances where children were feeling pressure to mimic the undesirable nutrition behaviours of their peers. Lunchables™ were a food item particularly troubling to some key informants (parents and EA's). In reference to Lunchables™, one parent acknowledged "... I think the kids feel a lot of pressure when they see their peers coming in with this crap...". Another parent stated "...my son is only in kindergarten and he's already coming home and saying 'why can't I have what so and so has for snack' and I say well 'what was it?' And he says 'it was cheese on a stick'. I just said to him bluntly, I said 'honey that's not cheese'."

Key informants deemed that students, especially females in the older elementary grades, experience pressure to engage in disordered eating behaviours. The administrator disclosed "we do have some girls that get pretty, uh, paranoid about their weight...and, and you know, they wanna look like Hanna Montana...". In reference to older female students, one EA described, "...I've seen them say oh what are you eating that for? There's calories...".

Bullying and obesity is another issue related to peer-modeling that was present in this school. The administrator conceded that some of the overweight kids "still get the classic abuse..." and one of the students stated that "a lot of times if you are obese you don't have many friends because people make fun of you for that." During the student focus groups one of the older students continually made jokes about obesity and eventually some of the other students joined in. Although bullying those who are overweight was an issue in the school many key players believed disordered eating issues to be more prevalent.

Parents also felt pressure to model ‘good’ parenting by keeping up with the other parents. During a discussion about sending treats for celebrations one parent commented “Because really if they are making nine hundred cupcakes or they make you know...It takes a lot of effort, but you feel this peer pressure to do what everyone else is doing.” The parents felt that SNP could be a way of relieving this peer pressure “The, the one way to relieve that peer pressure is to have these policies.” Many key informants recognized that students and parents feel social pressure to fit in and conform to the behaviours modeled by others.

Time constraints.

Another common belief amongst informants in *School One* is that time constraints limit the ability to fully implement SNP. Time constraints were cited as the main reason for the popularity of conveniently pre-packaged food in children’s school lunches. During the EA/lunch supervisor focus group it was indicated that parents often send convenience foods for children’s lunches, “I see a lot of processed foods... In the kid’s lunches that are quick, like the Lunchables™.” Not only were they concerned with the prevalence of convenience foods in children’s lunches they also expressed concern over the nutritional content of these foods. For example, one lunch supervisor indicated that many children’s lunches consist of “Container or Lunchables™ or just sort of pre-done kinds of lunch, which I think are really high in sodium and I don’t know about the nutritional value of that either ...”. Many key informants attributed the pervasiveness of convenience lunches to time limitations faced by parents and guardians. As one EA summed it up:

...I think too the, in, in this school you might see a lot of two parent families, ahh two work parent working families. And I think that whatever is easier, they'll just do. So if it's packaged pre, all done all they have to do is grab it and put it in a bag.

When asked why parents are sending these foods another EA stated, "Probably time constraints, it's easy, they don't realize what they are giving their child." Other interviewees conveyed the same point of view. For example, during the parent focus group (all participants were members of the parent association) while discussing the prevalence of Lunchables™ in school lunches, one parent questioned:

... we're the parents that actually look at our kids lunches... We're the ones that are you know taking the time to pack them. So how do we reach parents that are so over worked, so stressed out, umm come from complicated backgrounds?

Hence, it was commonly believed that parents are very busy and do not always have the time to prepare wholesome lunches for their children.

Enforcement of school nutrition policy.

Another barrier to SNP implementation is the variation in degree and methods of enforcement between schools within this division. As will be discussed in the next chapter, enforcement is related to attitudes and beliefs because the perceived degree to which the SNP was imposed depended on the approach taken by school personnel. Key informants discussed various aspects of this issue, including: differing degree of enforcement between schools, the desire to be lenient toward SNP implementation in this school, and enforcement of the policy takes time.

To highlight the difference in implementation between schools, the administrator stated, “some of the real zealots about nutrition, uh, would, uh, say staff shouldn’t be carrying coffee to class... but you know, that’s sort of isolated depending on the, on the school.” This is further evidenced in the following teacher’s quote: “It is very different from building to building and it’s very much dependant on who’s choosing to interpret and how they choose to interpret [the SNP]...”. This suggests that the SNP has been implemented differently between schools.

Although level and method of enforcement vary greatly between schools, it has been indicated on numerous occasions that key players within *School One* viewed the policy as a set of loose guidelines as opposed to a set of strict rules as demonstrated by this quote from the administrator, “We’re going to develop our own strategies and things... and having people police their own nutritional habits rather than being heavy handed.” Many other key players shared this view. According to a lunch supervisor:

...I think you also have to be careful not to, to keep it as guidelines, because even though I follow all the, the healthy stuff, when someone starts to tell me what to do, a lot of people just shut down. You can’t tell me what to do.

This sentiment also resonated with the teachers, “... I guess some people don’t like being told in explicit terms what to do...They prefer more of a suggestion perhaps?”

Interestingly, the term ‘police’ came up a few times during interviews and was usually given a negative connotation. This is illustrated in the following quote from the administrator, “...um that that [sic] meant the teachers would have to become the lunch police and that you know,...nobody expects you to be the lunch police.” Informants

made it clear that they did not want to be, as the administrator puts it, “draconian” when implementing SNP.

The administrator indicated that the SNP is “having an impact” but that “...it’s a slow process.” This view was repeated on several occasions during the interview. For example, he/ she also stated that the school division “knew that it wasn’t going to happen overnight.” However, how much time it should ideally take was never articulated.

Thus, it is apparent that enforcement of the SNP varies between individuals within the division even though they operate under the same divisional nutrition policy. The prevailing attitude of staff at *School One* was that the SNP is more a guideline than a strict set of rules. Furthermore, it was thought that implementation of policy is a lengthy process.

Theme 2: Communication.

Several barriers that appear to hinder effective communication were uncovered, including insufficient, selective and inconsistent sharing of SNP related information. After conducting interviews, it was clear that it was primarily the administrator who possessed an in-depth and well-rounded knowledge of the divisional SNP. Teachers demonstrated knowledge of some aspects of the SNP such as role-modeling, the canteen operator was knowledgeable about the food sales aspect, and parents were aware of changes to fundraising. Other key informant groups were not aware of the existence of a SNP, this is exemplified by the following quote from an EA/parent, “I think that ahh you have to know the nutrition policies first, and because I haven’t heard them or...Knew there were any nutrition policies ...” . Suggesting that either the SNP has not been

communicated to all informants or some individuals have not taken time to learn the details of the policy.

The components of SNP that are conveyed to key informants are largely based on administrators' judgment. The administrator demonstrated that they share the portions of the policy that they would like informants to be aware of "We just use the divisional policy and we publicize some of the, some of the sort of rules that we want parents to know about in our handbook". Consequently, some groups of key informants were only made privy to pre-selected components of the SNP.

In addition to selective communication, informants also conveyed that mentions of SNP had declined over time. It was indicated that the policy was firmly communicated when the SNP was first instituted, for example the administrator stated: "... when it [SNP] was first introduced everybody got a copy of it and we talked about it at staff meetings, um, quite regularly for the first little bit." Later in the interview, the administrator again alluded to inconsistent communication of the policy "... I did put it in the newsletter when we first...were implementing we had a couple articles in the newsletter saying 'this is what we're doing and this is why we're doing it'." Initial but declining discussion of the policy was further verified during the interview with the canteen operator:

Researcher: No, so you haven't seen the policy at all or?

Canteen Operator: I probably did a few years ago, cause it came in what a couple years ago? Ya, that's probably when I saw it.

Researcher: ok, so it's not something that you would see on a regular basis?

Canteen Operator: no, no

Although the policy is included on the division website it may be difficult to locate. One parent had gone online to look for the policy and had difficulty finding it, “I umm googled it [the SNP] and I, I looked for it on the school web site and the divisional web site and there’s nothing.” Some informants felt that communication regarding where to find the policy would be helpful: “Like even just saying you know, here is the link and, and you know go and, and look at your nutrition policy. I mean there has nothing been said about it.”

Theme 3: Impact.

In *School One*, impact of SNP can be categorized into changes to the school environment and individual transformation. Environmental impacts include: changes to type of drinks sold in the drink machine and to foods sold in the canteen, for hot lunches and for fundraising. Individual transformations include increased awareness of nutrition, nutrition issues, and the SNP and, to a lesser extent, altered behaviour. The most frequently mentioned impact involved those to the school environment, the significance of this will be discussed in the next chapter.

School environment.

When key informants were asked what has changed since SNP implementation the first thing that seemed to spring to mind were changes to the drink machines. For example, in response to this question, students indicated:

Student One: because I think for our drink machine there used to be like...

Student Two: PowerAde and they used to have Coke a long time ago.

Student One: But they took it away and now put all this other stuff like, orange juice and stuff.

Changes to the beverage machines were also the first impact cited by other groups of key informants. For example, one parent responded, “Hmm. Got rid of the pop out of the machines.”

Other forms of food sales were also commonly cited changes to the school environment. In reference to foods sold in the canteen, the canteen operator stated, “...we did used to sell, uh, chips and stuff like that and we don’t now” and one parent verified “...umm the one thing that I did and I we were aware of when it came down to is our ahh canteen changed its menu when [school division] brought down their policy.”

Parents also indicated amendments to types of foods sold for fundraisers:

“...chocolate is not welcomed or candy is not, is sort of frowned upon doing those as fundraisers.” Another parent further explained “We have also looked at doing fundraisers that have ahh healthy things that kids can bring for lunch as part of them as well. Like with mom’s pantry or the pizza thing.” Foods sold for hot lunch days have also changed as the administrator stated “well, our hot lunch day used to be hotdogs... and as soon as we talked to them about you know the new nutrition policy they [PAC] were very quick to start looking for alternatives.” One teacher indicated that instead of hotdogs for hot lunch they now receive pizza and fruit cups. Hence, key informant’s revealed an assortment of changes to the food environment as a result of SNP.

Individual.

Individual Impact refers to changes that have altered the individual. Two types of individual impact revealed by informants are increased awareness and altered behaviour. Of the two, awareness of nutrition, nutrition issues and SNP was more often reported and, although the students were the main focus of SNP, it was reported that awareness also increased for parents and teachers.

In reference to the effects of SNP on student awareness, one parent acknowledged “Like my daughter’s coming home saying to me mom that’s not healthy for you, mom you shouldn’t be doing this, mom... and, so she is. She’s picking up and she’s learning ...”. Similarly, a teacher described the importance of SNP in creating awareness for students: “I think they’re ahh, one of the, it’s very important to have them [SNP]... Things have really changed... Like what is offered here and this school and ahh even what the kids ahh talk about you know as, what is healthy food.”

Students are not the only informants who have become more aware of nutrition. For example, according to the administrator “...teachers are more conscientious themselves about what they’re eating” and “...parents are, are more aware of the importance of a good lunch...”. The administrator also stated “so I don’t think we’re there yet [behaviour change] but I think parents are a lot more aware than they used to be. So I, and uh kids talk about it too.”

The student focus group provided an opportunity to explore the level of nutrition awareness of students. It was encouraging that students demonstrated an enthusiastic awareness of why certain foods are healthy, for instance, one student explained: “...it’s

good for you [healthy food] because like it has lots of vitamins and calcium's for your body so you can grow more and better ...". They also demonstrated knowledge of ramifications of poor nutritional habits: "...but if you are eating lots of junk food, then like obviously then you are going to gain weight." Another student identified the long-term effects of poor nutrition: "...a lot of times junk food is the cause to the disease like cancer and stuff." One student even recognized his or her predisposition to diabetes and thus the added need for good nutrition: "My ah grandpa has diabetes...So, he ate a lot of sugar when he was kid. So, I start, I'm starting to try and eat more healthier foods." However, because most of the students were not familiar with the SNP they were not able to identify whether student awareness of nutrition had resulted from the SNP initiative.

Changes in behaviour were expressed only a few times during the interviews. For example, the administrator reported, "I do see that, I think that our junior high are a lot calmer now that we don't sell pop and junk food". Although, behaviour changes were few, it is encouraging that even minor changes have been reported, the importance of this will be discussed in the following chapter.

Behaviour not impacted by the policy: Throwing food in garbage.

A behaviour that was not altered by the policy is that of children throwing portions of lunch in the garbage. It was indicated that this behaviour had been occurring prior to SNP implementation and no observable changes in this activity were reported since SNP was introduced. School staff indicated concern over the amount of food students throw in the trash at lunchtime. The canteen operator explained "... what I see to uh, from the kids that uh the nutritious stuff still gets chucked in the garbage." One EA stated "I do garbage's, so I see full sandwiches, I see full bags of fruit, full apples,

oranges, full juice boxes. I've seen yogurt, I've seen it all in the garbage's. Not even opened." Most students verified that they and their friends do throw out food from time to time. When asked why, one student offered "like if I have like a banana that and I open it, it's like brown and soft, like then I just throw it out cause I don't even want that because it's gross" and another student suggested "Because they don't like it or if like they're full they're like oh, I can't eat this anymore so they throw it out."

The administrator indicated that children throwing their food in the garbage functions to "...subvert what their parents are attempting..". Parents believed this issue could be addressed via better communication between the school and parents. During a Parent Association Council (PAC) meeting, attended by the researcher, parents brainstormed to see what could be done to make parents aware of this ongoing issue. As an outcome of this meeting, the administrator during his/her interview indicated that the school had plans to better communicate this issue by "[creating] some awareness type articles and taking away the garbage cans and seeing what happens."

Description of Case Two (School Two)

The school used to form Case two (will be referred to as *School Two*) is an elementary school (grades K to 8) located within the city of Winnipeg in the province of Manitoba Canada. The school has between 100 and 200 students and is located in an inner-city, low socioeconomic status (SES) community. The population is comprised of students from various ethnic and racial backgrounds and observations revealed what appeared to be a higher than average rate of overweight and obesity amongst students.

Most children who attend *School Two* live within walking distance to the school and on most days all children (grades 1 to 8) remain at the school during the lunch period. During observations, which included observations of six lunch periods over two weeks in May 2010, it was noted that the majority of children purchased most or all of their lunch at the canteen on any given day. Hence, the line for the canteen was usually very long and much of the lunch period would elapse before all children had opportunity to purchase their lunches. All children consume their lunches in two designated lunch rooms each monitored by a supervisor and are allotted 20 minutes to eat, prior to heading outside or to the gym (depending on the weather) for recess.

The school does not have a vending machine so, all food sales occur in the canteen or in the hallway on hot lunch days. The canteen had one hot food item for sale each day following a five day cycle. Examples of these items include: pizza pop, hot dog, and grilled cheese. The canteen also offered a variety of other items available each day, some examples include: crackers with processed cheese, cup of noodles, Five Alive®, pudding, fruit cups, milk (500 ml), chocolate milk (500ml), yogurt (sometimes), chips (when left over from hot lunch days), and cheese strings (sometimes). Many children purchasing foods from the canteen would purchase either the hot lunch item or a cup of noodles, with chocolate milk, and one or two additional items. On the day that potato chips were available, researcher observations indicated they were a very popular item in the canteen.

Few children brought either part or all of their lunch from home on any given day. These lunches varied but, most contained sandwiches and/or a thermos of soup, fruit and a juice box and some lunches contained chips and chocolate bars. After lunch,

observations of the trash cans revealed many whole pieces of fruit (e.g., apples, oranges), sandwiches and several half full containers of chocolate milk had been thrown away. Additionally, the researcher witnessed one hot lunch day while visiting *School Two*, during which students were given a slice of pizza (pepperoni or cheese), donut holes or a bag of chips, and a chocolate milk. The hot-lunch appeared to be popular amongst the students.

School hallways contained several posters pertaining to nutrition and physical activity. For instance, posters advertising activities for milk week were situated in the main hallway outside the lunchroom, and in the hallway leading to the gymnasium there were posters about the importance of physical activity and nutrition. In addition to the school environment, neighbourhood characteristics influence SNP implementation and are highlighted in Table 4.3.

Table 4.3: Demographic Information for *School Two* Catchment Area^{1,2}

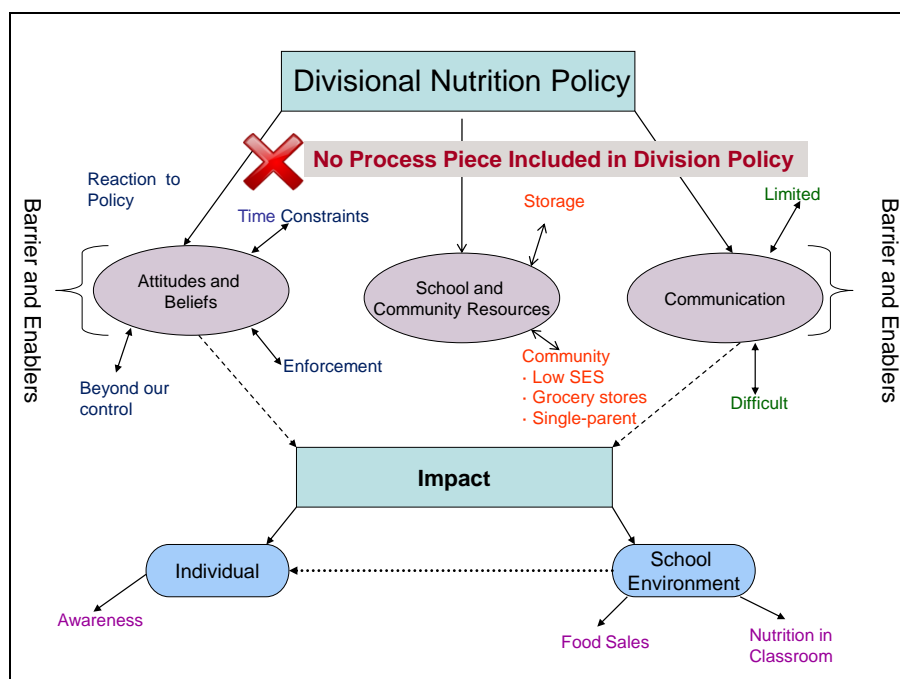
Demographic	% of Community Population
Visible Minority	6.5%
Immigrant population	10%
Transportation= Car, truck, van as driver	60%
Marital status= divorced	11%
Unemployment rate	9%
Household median income	~\$43,000
One parent (female) households	33%
One parent (female) households that are low-income	40%
Dwellings that are owned	54%
Dwellings that are rented	46%

1. Data has been rounded off in order to protect identity of schools 2. All data obtained from 2006 Census (City of Winnipeg, 2009).

Themes: School Two

Figure 4.3 is a summary of themes derived in *School Two*. These are categorized into those that function as barriers/enablers and those that are impacts of implementation. Sub-themes specific to this school, have been identified using two-way arrows (e.g., time constraints).

Figure 4.3: Model of *School Two* Results



Theme 1: Attitudes and beliefs.

In *School Two*, informants exhibited strong reactions toward the requirement to role model appropriate nutrition behaviour. They also demonstrated beliefs that nutrition was beyond the schools' control, enforcement varies between schools and change takes time. The administrator believed role-modeling to be an important aspect of the nutrition policy; "so it's one thing to talk about the Canada Food Guide and stuff like that. It's another thing to walk the talk as a school." The administrator also suggested that it was relatively easy to implement:

...we even talked about the importance of role-modeling. That the professionals in the building not be walking in with a bag from McDonalds and you know... a coke while the kids aren't, you know we're not serving it in the schools. So, um

no, it was very thoroughly implemented and the expectations were very clear and uh, I think there was a bit of a moral imperative that was ... understood there. That we understand this is best for society and for kids and so it wasn't hard to implement. You just did it.

Clearly, the administrator felt role-modeling was a valuable component of SNP.

On the contrary, some teachers demonstrated apathy regarding the requirement to role-model. For instance, one teacher referred to the SNP as "... just guidelines for people to, to try and you know, not abide by, but work towards. And a lot of it was on modeling." They felt that behaviours such as teachers bringing coffee to class would not negatively impact the children unless the behaviour was taken to extreme, but, teachers believed that is not likely to happen, "...there's no one in the building that I know of, that you know walks around with a pot of coffee under their arm." Teachers indicated some staff within the school did feel threatened by the requirement to role model: "The threat seemed to be on modeling and umm school offerings."

It's beyond our control.

Most key informants were of the attitude that children's food choices are beyond the control of the school. For example, they indicated that children are consuming unhealthy foods for breakfast before they come to school. An EA told a story of how a child complained of suffering from a stomach ache and it was revealed that he had consumed two ice cappuccinos for breakfast.

Not only did informants indicate that what children eat outside of school was beyond their control, food consumed within the school is also beyond their control, as one EA demonstrated:

...we can't control what they are bringing in their lunches...If they are bringing it from home. We can't control if there is two bags of chips and...a chocolate bar and that's all they have for lunch...So when, in that way I mean we can offer it, but if they're not choosing it we can't do much.

Most key informants agreed with this belief.

Informants explained that since this is an inner city school many families come from low SES backgrounds and often cannot afford to send their children to school with healthy food. For example, one EA argued:

we can preach to the...kids in grade two as much as we want that this is nutritional...But unless the parents are going to be willing to go make that and have that food...available or even, can even afford to go have the food available.

This view of nutrition perpetuated a belief that imparting proper nutrition is the parent's responsibility not the schools. However, as previously mentioned, most children purchase lunch at the school canteen creating an opportunity for the school to influence the foods children are consuming.

Since many key informants view nutrition as beyond the control of the school they believed that an important aspect of a successful SNP would be to involve the parents. They recommended one way to keep parents involved would be to provide information and suggestions regarding healthy and affordable options they can provide for lunch. For example, one parent stated, "...maybe when, at the beginning of the year they tell us this is what you can order and whatever and maybe give us an example of snacks to send with our kid...you know that might be good." Some informants also felt that teaching parents to read labels might be a worthwhile endeavor, as one EA stated,

“If we could, if they could also teach label reading.” Many informants felt that education should be a holistic approach that targets the entire family and providing resources for parents and families would be beneficial.

Time constraints.

Key informants in *School Two* believed time constraints to be a barrier to SNP implementation. For example, the lunch supervisor/canteen operator felt that people were too busy for the policy to be fully implemented. Most of the time constraints mentioned in this school were related to parents’ ability to procure healthy food and provide nutritious lunches. Although, food provided at home is related to affordability, as one parent explains, it is also related to convenience, “It’s a lot easier to throw a little bag or little bags of something that’s prepared...into a lunch, like...so I think that’s a factor as well. It’s not always that maybe our families can’t afford it...But it’s, it’s about convenience and umm, as well.”

Parents also believed time constraints are caused by the way the school day is structured. One parent explained that she used to send her child to the breakfast program however, she stopped because she felt the program was not providing the students with enough time to eat. Thus, time constraints are another barrier to SNP impact faced by informants in *School Two*.

Enforcement of school nutrition policy.

Informants In *School Two* indicated discrepancy in the enforcement of SNP, as exemplified by this quote from the administrator, "...and then schools, uh apply that policy [SNP], you know to, uh, my understanding is that not every school applies it exactly the same way." A teacher corroborated this in the following quote:

Ok, umm from being at other schools, I've noticed that umm, it's very different within our school division. Like from school to school depending I guess what the principal has decided to ahh do and I know, at my previous school, it was very different from this school. Like it was VERY, VERY strict. You couldn't even bring, like teachers couldn't bring, they couldn't even walk around the hallways with ahh, a coffee mug.

Another teacher attributed these differences to interpretation of SNP by various administrators: "I guess administrators can choose to, to sort of implement the rules." Parents also recognized a difference in implementation. One parent indicated that at another school, which her friend's kids attend "...actually like inspect the lunch before they eat the, the thing", it did not appear that she was endorsing this practice but rather highlighting implementation discrepancies.

Implementation also seemed to vary between the division board office and schools. One example of a policy component that key informants signified was enacted more strictly at the board office than in the schools was role-modeling. According to an education assistant:

...a couple of years ago umm,[School division]_was really big on umm nutrition policy and we weren't supposed to walk around with coffee cups or we

weren't supposed to do anything, but I didn't, I don't really see it being imposed in the school as much. But when you would go to the board office...that was, it was more.

Informants expressed varying opinions regarding appropriate intensity of SNP enforcement. For instance, some teachers think the policy should be loose: "They were, they were just guidelines for people to, to try and you know, not abide by, but work towards. Meanwhile, parents made it clear that they want the policy to be more stringent: "I think some of the things [SNP regulation] need to be a little tighter...". The administrator recognized that "...it's uh important to have a good understanding of the provincial and school policies, like, the rationale behind them". However, as key informants indicated, this understanding varies between schools.

Change takes time.

Teachers in *School Two* believed that change takes time. They indicated that change has occurred but it is a slow process: "I would say I have seen a shift. A lot of it's in the planning and talking and I don't know if action has happened as fast. I think that takes time. Umm, mmm, yeah more time. There has been a change, but it's really slow." Other teachers echoed this belief: "Umm, then there is awareness, but it's I guess, it takes a long time cause in, in action it's not... as evident." The teachers expressed that the school is moving on a continuum toward change.

Theme two: school and community resources.

The resources available in a school and within the community can function as a barrier/enabler of SNP implementation. The administrator indicated some barriers to SNP implementation that were due to a paucity of resources within the school. Furthermore, as *School Two* is located in a low SES community, lack of availability of resources outside the school also serves as a barrier to SNP success.

School resources.

The school administrator cited lack of storage space for produce, especially refrigerator space, as a barrier to SNP implementation, “when you want to serve more fruit and vegetables. Um, just the logistics of getting them into the building and keeping them refrigerated. Having enough fridge space.” Thus, although the administrator indicated a desire to provide more vegetables and fruit, the lack of resources in the school made it difficult. The administrator also mentioned other school resource barriers including, a limited number of support staff to help with food preparation, distribution and clean up, the need to train staff in food safety, and limited space available for food preparation. Encouragingly, the administrator specified that they have overcome some of these barriers, “you know we’re, we do fruit and veggie trays cause those are more ...easy to prepare...and you don’t have to deal with the dressings and the bowls.”

Other informants identified the canteen as a barrier because foods currently being served in the canteen were not necessarily healthy foods. For example, during observations the following items were being sold in the canteen: hotdogs, Pizza Pops, Mr. Noodle, crackers with cheese, pudding, and rice crispy treats. However, one of the

struggles of the lower SES school was to provide food in the canteen that was healthy, easy to store and affordable:

So if we have, if there's going to be any changes made to our school's lunch policy for what they can order... They have to stay within reasonable guidelines that the kids can still afford the stuff... Cause then the parents won't be able to afford giving them lunch money... And then we'll just end up sending them to school with the junk that they were buying here before.

Thus, inadequacy of school resources serves as a barrier to successful SNP implementation in *School Two*.

Community resources.

There are many challenges faced by schools located in lower SES communities. Difficulties pertaining to procurement of healthy food in this community can be attributed to the following barriers: affordability of nutritious food, availability of transportation and proximity of grocery stores, issues of single-parent households, and storage issues. In some cases, even if these foods become accessible, children may not want to try them because they have only experienced limited exposure to vegetables and fruit.

Affordability of healthy food.

Affordability of nutritious foods was cited as they main barrier to food access in this community. Informants believed that many families in the community do not feed their children adequate amounts of fruits and vegetables because they are expensive, as one EA stated ,“sometimes, like when you are eating healthier, there's a lot of extra costs involved in it. Just even buying, the supplies at home...and then what some of these

people can afford.” One parent substantiated this claim when she told a story about buying fruits and vegetables and her “bill doubled ... because of the fruit prices and the vegetable prices are so high”. Another EA offered her observations at the grocery store in this community, “A lot of the parents in there and it’s pretty meager what they’re buying and you don’t really see them that much in the fruits and vegetables, it’s more the noodles...and the cheaper cereals...just to kind of get full on.” This suggests that it is difficult for families to supply healthy food for children within the home and for their school lunches.

Furthermore, as previously explained, key informants viewed affordability as a major barrier to selling healthy and fresh food in the canteen. It appeared to be a major struggle for school staff to achieve balance between nutrition and affordability.

According to one EA,

So, have you seen the snack shack, what they offer? Ok. To me that’s not healthy lunch choices. Pizza pops one day, hot dogs one day ha ha, ahh what else do they have? The muffin is good. Muffin and a piece of fruit. That’s awesome... What are you going to do? It’s the cost thing right?

Some staff argued it is preferable to sell unhealthy foods that are affordable as opposed to the alternative. According to one teacher “The, the argument for really crappy foods is that the kids are better off eating those than nothing else.” This is concerning because the majority of children in *School Two* rely on the canteen for most or all of their school lunch each and every day: “I don’t know if those parents are um, necessarily, ah, attuned to nutrition policy in their choices. Most of them send kids with money to our snack shack”.

Another community barrier to acquiring healthy food is limited access to transportation and proximity of grocery stores in the neighborhood. Parents indicated there are no affordable groceries stores located within the neighbourhood: "...we also just like lost a grocery store... So now it's like we have to, if you don't have a car... you got to take like a long walk or you are busing it just to get stuff." According to the parents, the closest place to shop for food is a high-end grocery store which they felt most parents in the community could not afford.

Since there are no lower-priced grocery stores in the area, transportation to an affordable grocery store became a major challenge for parents: "And if it's a weekend or something and you didn't get there [the grocery store] in time or the buses don't run... Then you have to buy your lunch here, because you don't have nothing at home" and another parent added, "... I'll hop on the bus and I'll go all the way down there [the grocery store], but it takes four hours just to go down there ...". Clearly, access to grocery stores and to transportation are also important barriers to obtaining nutritious food in this community.

An added struggle faced by families in this community is that of the single-parent, single-income family. The administrator summed up the struggle of single parents to provide nutritious food for their family when the administrator said, "I think sometimes when you're a single parent struggling raising three or four kids... Trying to get, you know, it [nutrition] just becomes one of those things that gets sacrificed." Interestingly, the parents who attended the focus group are both single parents and the following quote describes one of the parents' struggles: "Well, I know – I'm a single parent. I have one income... coming in... I do get help, but not always... I don't always have the money to

buy...”and she further explained that “...I’m trying to buy more healthy stuff for them...cause I know what kind of stuff they get at school here so...I want her to go to school with more healthy things... But that’s difficult.” The parents made it apparent that they desire to provide nutritious food for their families however, they do not always have the means to access such food.

Children’s’ limited exposure to vegetables and fruit.

Some key informants signified that many of the students at *School Two* had only limited exposure to certain vegetables and fruits. One teacher, recounting a story about a boy in his class who had recently immigrated to Canada, indicated “you know he has never seen vegetables before. So he...so ahh, to, to teach him awareness...”. Another staff member exclaimed: “... they [students in the school] didn’t even know what broccoli was.” According to the canteen operator/lunch supervisor: “because a lot of our children have never been, they never, they they won’t even try it [unfamiliar foods] you know...oh no, cause they don’t know what it is so you have to coax them into trying it.” Limited exposure to vegetables and fruits is a barrier to convincing children to try new foods.

The peanut butter ban- a challenge to low-income parents.

A unique barrier, related to the SES situation of this community, is the difficulties caused by adhering to the peanut allergy policy. When asked about barriers to healthy eating one EA offered, “The, no umm peanut policy, I think is a, is a big one for some of the students in the building...peanut butter is probably a...a main you know...something that they have in their house and...Breakfast morning and maybe even supper”. Another

staff member explained, “and a lot of them they don’t bring a peanut butter sandwich they’re not having anything at all”.

Parents agreed that a ban on peanut products in schools poses a particular challenge in the low SES community. In reference to peanut butter, one parent stated, “It’s a staple food...It’s on the nutrition guide right?...You need to eat...”. Although banning peanut butter created more challenge for parents, they also recognized the importance of protecting children with allergies, “But if it’s going to kill somebody, I’m fine keeping it at home.”

Whereas, some school staff believed allergy policies are too strict. One staff member suggested that educating and taking precautions around children with allergies would be a better approach:

In a way I don’t know if we’re doing them justice because eventually they got to go out in the world and they got to be subjected to to...to the food allergies and if they’ve been protected all the way, how are they going to be taught to...about the caution and all these different things?

Difficulty stemming from the allergy policy was an unexpected barrier to provision of nutritious lunches in *School Two*.

Theme 3: Communication.

Another barrier in *School Two* is lack of communication. The administrator conveyed that communication within the community is difficult because, due to the SES, children and families are often transitioning in and out of the elementary schools. The administrator indicated that communication with this portion of the population was one area that needed to be better addressed:

if I was to look at a school improvement goal in the area of nutrition, I think one of them would be um, improving our communication of those types of policies, uh with our transient families instead of you know, just a handbook, actually having uh, and it's hard cause you're doing intake meetings, you're getting a lot of information about students.

At this school, existence of the SNP was not being widely communicated. The administrator appeared to be the main informant that was knowledgeable about specific aspects of the policy. When asked if they were familiar with the policy, the EA's all laughed and one stated "No, I can't tell you much", the others nodded in agreement. Some EA's also indicated their children at other schools had brought home copies but they had not read it in detail, while others had not been exposed to the SNP policy in any way. Similarly, parents indicated the nutrition policy has not been directly communicated to them, rather they learned of the changes when lunches started being sent home, "Cause I didn't know that they were going, not going to let them eat it and they didn't come to us and say anything so."

In addition to lack of communication regarding SNP, there also seemed to be a lack of communication of nutrition concerns between the school and the parents. Some informants felt the parents didn't know what the children were doing with their lunch money as it was not being communicated between the school staff and parents. One teacher illustrated this when she said "...it's not the parents that are taking them to seven eleven to get slurpees...They are doing it on their own...So it's not like the parents probably don't even know that the kids are doing that."

Theme 4: Impact.

In *School Two*, impacts include changes to the school environment and to the individual. Impacts on the school environment include: changes to food sales, new nourishment programs, more nutrition in the classroom, and offering more healthy choices. Individual changes include: altered student behaviour and increased awareness.

School environment.

Informants indicated that changes to foods sales in this school include: offering nutritional foods for fundraising (e.g., instead of selling chocolate they were now selling healthier options [cheese, soups] and non-food items [magazine subscriptions]), the elimination of carbonated or sugar sweetened beverage sales in the canteen and reduction in the variety of sugar sweetened foods sold in the canteen. The administrator felt that changes to food sales served as an opportunity for education: "I think the policy has been very effective at the school level. Um, I think even taking the soda pop out of the schools was a huge statement right?"

However, other staff and parents felt that more changes to food sales need to be made. According to one school staff member:

So, at snack shack we've had a, snack shack for about... I don't know, eight, ten years maybe... and it had umm, phenomenally unhealthy foods there... Umm, and it took the, it hasn't really really changed... In spite of the policy, but the, the discussion goes towards that so... Again, like [name] said, you know a lot of talk, but... But that hasn't changed and the kid's foods haven't changed.

Thus, some changes have been made to food sales as a result of the SNP initiative, but it is clear that more changes need to occur in order to create an environment that fosters healthy eating.

Informants conveyed changes surrounding food have also taken place in the classroom. For instance some EAs reported that unhealthy foods given as a treat or a reward in the classroom has declined:

EA: One thing I'd, you know there is one thing I do remember on there [SNP] and it said about umm, umm sugary snacks being only offered on occasion... By teachers or classroom, in classrooms.

Researcher: Do you think that's happening or?

EA: I do. Our teacher doesn't hand out, she umm, she has a big bucket of gum every once in a while... She's handed out maybe three times this year.

Additionally, teachers reported changes to the curriculum after SNP implementation:

Teacher 1: And it [nutrition curriculum] seems to have come in, in some ways,

like last year...

Teacher 2: Umm, hmm. Yeah, cause we taught, we did the food guide last year

and...

Teacher 1: Yup.

Teachers also indicated that food for special occasions had changed and when offering foods in the classroom they have started to incorporate an education component: “Even when we did our, like [snack program] and all that, we always had a healthy snack for the kids and we talk about what food groups it came from and...”. Thus, the way in which teachers address food in the classroom has changed, to some extent, as a result of SNP.

Individual.

Many informants believed that SNP implementation had resulted in a greater awareness of nutrition and nutrition related issues for the staff, students and parents. The school administrator felt that awareness, which the administrator defined as increased conversation about nutrition, was one of the most evident results of the SNP, “I would say that certainly, uh, there’s a lot more conversation about nutrition because of the policy.” Although many informants felt that the SNP hadn’t yet generated a major shift to healthy eating they indicated that some impact had been witnessed, as one teacher stated “As far as the kids lunches go, I don’t know that there’s a change there... There’s an awareness when you talk about them. And you ask what they brought, and especially after we do the, ahh nutrition unit or something.”

Furthermore, in the focus group with students (grades five to eight) the children demonstrated knowledge and awareness about nutrition and healthy eating. For example one child explained, “Umm, in health class at the beginning of like the school year: umm our teacher said that like umm if you eat...lots of junk food when you are little and then

once your body starts to change and then you'll get all the weight from it after." When asked why it is important to eat healthy, another student responded "And you won't like, it will give you, it will boost your immune system, so. You will have a less big, you'll have a less, ahh, and a smaller bigger chance of getting sick."

When students were asked if the school should have a school nutrition policy all students agreed that it should. One student answered "Yeah, because like some kids, all they bring for lunch is like junk food. Like...I think yeah, we should have it [SNP]." The students even demonstrated knowledge of the long-term effects of poor nutrition: "when you get old and when you were little, all you liked was junk food and then you get bigger and your body is all like crumbly and stuff."

Description of Case Three (School Three)

The school that formed Case three (hereafter referred to as *School Three*) is a secondary school (grades 9 to 12) located in a suburban neighbourhood within the city of Winnipeg, Manitoba Canada. It is a relatively large school in both area and population as compared to the other schools in this study, with approximately 700 to 800 students. Observations in school three revealed a predominantly Caucasian adolescent population and few students who appear to be overweight or obese.

Most students live in close proximity to the school, however, according to observations, some senior students drive vehicles to school (approximately 20 to 30). Many (approximately 70%) leave the school grounds during the lunch period when the weather is nice but, it was unclear where they went for lunch. Observations of the school environment took place during May when weather was warm and informants indicated

that students are more apt to leave the premises during warm weather. Thus, it may be that more of them remain at school for lunch during the winter months. During observations I noticed that on days when it was raining or cool outside more students remained at the school. On the rainy day the cafeteria seemed to be overflowing with students and the cafeteria line was comprised of at least 15 students at any given time over the lunch period. However, on sunny warm days the cafeteria was barely half full during the lunch period.

There are fast-food restaurants in the neighbourhood, they would take approximately 15 to 20 minutes to reach on foot but, are more accessible to students who have vehicles or bicycles. Not surprisingly, students reported that those who have motor vehicles or bicycles are more likely to frequent fast-food restaurants at lunch. Of students who did remain at school many consumed their lunches in the cafeteria and a few sat in the hallway and most classrooms were locked 20 minutes after the start of the lunch period.

The lunchroom appeared relatively small compared to the number of students it serves. Students who remain at school are given the entire lunch period to consume their lunches as recess time is not enforced. The lunchroom is the only place in which food can be purchased and it contains the cafeteria, a drink machine and a snack machine. The cafeteria menu included: sandwiches, pastries (that either contained fruit or were made with whole wheat flour), baked french fries and chicken fingers, salads, wraps, juice, chocolate milk, white milk and water. It was indicated that the school cafeteria no longer had a deep fryer as it was transitioned out one year after the SNP was enacted in the school. The drink machine contained bottled water, bottled 100% apple juice and bottled

100% orange juice and the snack machine contained baked chips, sun chips and granola bars.

Despite the accessibility of food in the school, many students brought bag lunches. Overall, lunches brought from home appeared to be nutritious, most contained sandwiches, bags of crackers, juice boxes and sometimes fruit. The lunchroom also had two microwaves available for students but, they did not appear to be widely used.

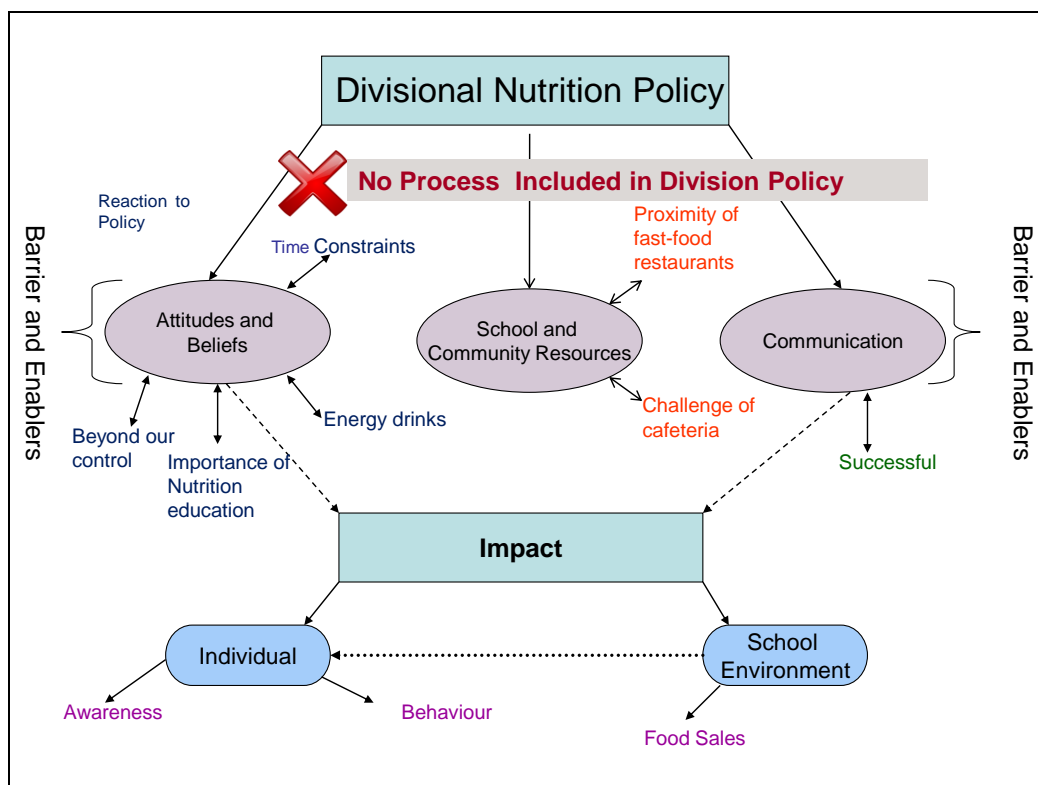
Observations of the hallways yielded encouraging results. In the main hallway, outside the cafeteria, there were bulletins on various health topics including, information on eating disorders, caffeinated beverages and energy drinks. The back hallway contained a nutrition facts display depicting the amount of sugar and fat in popular fast-food meals. The large poster *Quick Guide to Healthy Eating* (provided by the Government of Manitoba) was located prominently in the lunchroom next to the cafeteria counter. These items seemed to be placed in accessible areas and during the student focus group informants recalled seeing the guidelines poster. In addition to the school environment it is also important to understand the neighbourhood characteristics in which the school is located. Table 4.4 summarizes some demographic information of the catchment area for *School Three*.

Table 4.4: Demographic Information for *School Three* Catchment Area^{1,2}

Demographic	% of Community Population
Visible Minority	8%
Immigrant	11%
Transportation= car, truck, van as driver	78%
Marital Status= divorced	5%
Unemployment rate	4%
Household median income	~\$80,000
One parent (female) households	10%
One parent (female) households that are low-income	0%
Dwellings that are owned	80%
Dwellings that are rented	20%

1. Data has been rounded off in order to protect identity of schools 2. All data obtained from 2006 Census (City of Winnipeg, 2009).

Figure 4.4: Model of *School Three* Results



Themes: School Three

Theme 1: Attitudes and beliefs.

In all three schools, the reaction of key informants to the idea of SNP implementation was often based on their personal values and beliefs surrounding nutrition. Many key informants in *School Three* demonstrated favourable attitudes toward nutrition, for example the administrator stated, "...I'm a proponent certainly of uh, having students make healthy uh choices...ya, I think it's very important." Informants indicated that most teachers also foster healthy attitudes toward nutrition. For example the custodian stated, "There's quite a few younger teachers, you can see they eat fair, uh

really, really healthy.” This favourable attitude was reflected in the level of implementation at this school, demonstrating the benefits of school support of the SNP initiative.

Role-modeling.

One particularly strong reaction pertained to the ‘role-modeling’ component of the divisional SNP and was expressed by teachers and the administrator. The administrator recognized that role-modeling is a difficult and sensitive component to implement, “we do have people that regularly go to Tim’s and they’ll bring coffee back...kids will see them with the coffee and stuff...uh, but we’ll have kids that’ll bring coffee in in the morning too.”

Although, the administrator recognised that teachers do not always comply with the requirement to role model, teachers indicated they believed role-modeling and setting an example are important components of the SNP. For example one teacher explained, “Ahh, I just ahh think that it’s important to remember that you know we can’t change what happens with these kids, but we can set an example.” Another teacher offered a story about the effect of role-modeling in her class room, “I, I think it’s interesting that...almost every time that I pull a piece [of fruit] out, they’re like, or if I have grapes sort of on my desk, everyone’s like, whoa those grapes look so delicious.”

Furthermore, teachers felt that the school environment can also be used to set an example. They believed students could easily access unhealthy food in the community but supported the idea of a school environment that fosters nutrition as a means of setting a good example: “ok they can’t get Pepsi or Coke here, whatever. And yeah but, and I, I

think it's good that we're kind of setting that example and, and I think that's you know trickling down." Thus teachers demonstrated support for role-modeling through teacher behaviour as well as role-modeling via a healthy school environment.

Although it was not a component incorporated in the policy, peer to peer-modeling of negative nutrition behaviours appeared to be a barrier to SNP implementation. Key informants in *School Three* believed students were partaking in certain unhealthy behaviours even though they recognized the health risks these behaviours pose. Consumption of energy drinks was a common issue related to peer pressure that surfaced in this school.

Many informants demonstrated belief that peer pressure related to energy drinks was an important nutrition issue occurring at this school. For example the administrator conveyed that "the issue we're still struggling with certainly is like Red Bull™...I mean, and and we're going to talk some more about about that because that's just that's got to end...I mean there's so much caffeine in those things... and we've got kids drinking two, three a day."

The EA's also expressed their concern regarding energy drink consumption. One EA explained his/her attempt to rectify the situation, "I've been like doing researching, and giving them [the students] all these horrible statistics to try to get them to stop. But they're...They're doing it anyways, so...". Likewise, the teachers demonstrated concern over energy drink consumption: "...And every day just about, if they don't drink it there, they're drinking it, just before they've gotten in my class. They're finishing it up and I can't believe how many kids are drinking that stuff right now."

Even the students agreed that many of their peers consumed energy drinks during

the school day as evidenced by the following conversation:

Researcher: Not here, ok. Umm, one of the things I've heard from some of the other people in this school is energy drinks. People drinking energy drinks. Is that coming from you guys that are you know the students? Is that umm common? Is that something that actually does?

Student One: Yeah.

Student Two: Yeah.

Student Three: Yeah.

Student Four: Yeah, everyone does.

Researcher: Yeah?

Student Four: Well, lots of people do.

Researcher: Yeah?

Student Four: And you are always seeing people walking in class with a Red Bull and stuff like that.

Several informants identified energy drink consumption as an issue because students were consuming them in copious amounts which could pose risks to health. For example, the administrator believed energy drinks to be an issue because, "...there's so much caffeine in those things... and we've got kids drinking two, three a day." Even the students conceded: "We all know it's not good for you." One teacher even offered a story about the effect of energy drinks on a student in his/her class, "...it was like teaching a Jack Russell terrier, who was constantly seeing squirrels out the window. And I found out he was knocking back two or three of those [energy drinks] in the morning just to put an edge on, I guess."

It is interesting to note that energy drink consumption is one nutrition issue in which most informants agreed that strict regulations need to be imposed. For instance, one EA stated, “I think we should be able to dictate it [energy drink consumption].” The administrator indicated that banning energy drink consumption in school was on this school’s agenda, “I think what we’ll do as a staff is we’ll talk about saying were banning energy drinks from our building.”

However, some teachers felt that availability of energy drinks should be mandated at a higher level than that of the school:

I would like to see the ahh, the governments, the provincial and, and federal governments playing a stronger role in, like writing policies to restrict umm drinks like these energy drinks, really harmful umm beverages. Harmful foods, restrict those in, in schools and mandate it and make it illegal... To have these schools, these kinds of things available for students and have them, so that they can’t even be in the building. I think, umm but that’s beyond our ability to control.

Hence, energy drinks were viewed as nutrition and health issue within this school and many informants believed that stricter action needs to be taken regarding their consumption.

Beyond our control.

Key informants in *School Three* were of the attitude that influencing student nutrition is beyond their control. This attitude was adopted because informants thought that students were old enough to be independent and make their own decisions regarding food choice. For instance, one parent stated, “ If you haven’t taught it to them by now, I

would suspect it, you know, teenagers are going to do what they want.” Another parent explained, “But then my daughter’s you know almost sixteen years old and she is making her own choices anyway...”. Because autonomy has increased for students in secondary school, informants indicated that education, rather than restriction, is the best approach to fostering wholesome food habits at this level.

In *School Three* support for nutrition education was prevalent but they believed that nutrition education needs to start at an early age in order to achieve optimal impact. One EA summed it up nicely when he/she argued “I think that umm, you’ve got to get in to the elementary schools, the primary schools... That’s where the changes are going to be made....As far as setting those eating habits and getting them ingrained in these children.” The other EA’s concurred with this statement: “I think that can start when the kids are in kindergarten”. The parents also echoed this sentiment, “And they have to, and it has to like be reinforced with the early years teachers” and another parent stated “It’s not going to happen just in high school.” Thus, the teachers, EA’s and parents believed education needs to start when the children are young.

Another belief surrounding nutrition education was that it needs to continue throughout kindergarten to grade 12, for example, one teacher stated, “All the way through, but particularly in high school. Cause I’ll quite often get kids in grade twelve taking my course for the first time and I am amazed at how shallow their knowledge is about something so basic as, as eating.” The students also recognized the importance of continuous nutrition education:

So they’re just trying to send a message to like I think start it young and coming through high school, because when you are an adult you are going to go well:

should I just go get a two dollar burger or should I actually think about health choices, and they're hoping like, if you teach at high school it will...

The other students nodded in agreement and one student added "...if every single day it's getting drilled into you that it's like ok, eat healthier and all that; people would be more likely to...". Hence, teachers and students believed that ongoing nutrition education was necessary for better health.

Time constraints.

Informants in *School Three* cited time constraints as a barrier to SNP implementation because they limit the students' time to eat lunch, and influence the amount of convenience foods consumed. Unlike elementary school, which has a structured time set aside for lunch, the secondary school did not include a time intended solely for food consumption. Thus, many students in this secondary school did not set aside time during the day to eat their lunch, for instance, students participated in extracurricular activities or extra courses during the lunch period.

One teacher affirmed that several students are not allotting themselves time for lunch, "Umm, what I find is students who are umm, who are, their schedules, they are taking extra courses, lunch period courses. So they are coming to my class ahh, every other day, have not eaten, they haven't eaten all morning." Similarly, one parent explained that her child is "inhaling" his/her lunches "because they take music right through the lunch period" she further explained that "they don't even have time to stand in the cafeteria line."

Clearly students are not leaving adequate time in their schedules for lunch. Additionally, informants explained that parents are beset by time constraints that hinder their ability to provide nutritious foods for their children, as one EA stated:

... I think it's easier for parents to just give them five dollars... I mean, parents, both parents are working... they're running activities like every night of the week... And you are trying to organize your dinner, never mind figure out lunches... It's just easier I think for a lot of parents to just give them money.

The majority of EA's concurred with this statement. Furthermore, the EA's felt that this strengthened the rationale for the cafeteria to be providing healthy options:

Which is then if parents were, are in that position, which I, I agree that they are, then it's all the more pressure on the canteen[sic] to be providing quality food that the kids are going to have a five dollar bill to go spend money on.

Key informants indicated a need for healthy food options in the cafeteria and for a portion of the lunch hour exclusively for food consumption .

Informants believed that since parents don't always have time to pack lunches and students don't always have ample time to eat their lunches this has resulted in consumption of easy, but not necessarily healthy, convenience foods. For example, one teacher explained that: "...it's surprising how many of them just come with, they grab the box of crackers out of the cupboard and that's what they're sitting there eating. Because it's quick and it's easy...". This is further evidenced by the following parent comment, "It's whatever. You know the noodle...that you can warm up in the microwave in thirty seconds and those kind of quick things because of the school schedule."

However, in some instances, informants felt that students were also consuming quick, convenient yet healthy options. For example, when asked if and what type of fruits and vegetables students are consuming one teacher answered, “Probably mini carrots I would guess because they are, or those convenient little mini carrots with dip...”. The teachers indicated that fruits and vegetables were chosen based on their convenience, according to one teacher “if it’s convenient and handy, or like pre-washed, those mini carrots are, or grapes that are already you know in a zip lock or whatever...”. Clearly time constraints, abundant in *School Three*, drive the need for food that is quick, easy and convenient.

Theme 2: school and community resources.

In this high school the cafeteria was contracted to a private food company. The administrator explained that working with the food company to serve more healthy options was one of the difficult tasks involved in SNP implementation. In reference to the company that runs the cafeteria the school administrator stated that “it was a bit of a struggle for them at first...because they were losing business.”

During the interview with the canteen operator these issues also surfaced: “Well I know they changed a lot of things. Um, like no fries...my business went way down.” Likewise, other informants recognized the decline in cafeteria sales after the SNP was instituted. For instance, one EA confirmed, “Well, last year we still had access to a deep fryer, so they had a treat or...The cafeteria was full. This year though, I I don’t, I find it’s not as popular to buy cafeteria food, but they still do.”

Teachers communicated that they feel healthy options offered in the cafeteria are not fresh or appealing. They mentioned salads with “wilted lettuce” and bagels “drenched

in butter”. Some of the teachers questioned the actual health content in some of the “healthy” options for sale. One teacher questioned, “Well and you think what’s, you think what’s in those wraps: I mean, it’s like chicken fingers, there’s, there’s ones with cheese, a honey dill sauces, I mean nothing, there’s no tomatoes and cucumbers and, like vegetables that are healthy for you...So really, do you really feel like you are having a healthy option there?”

Informants conveyed that cafeteria food was not to their liking: “..the food here is, I mean it’s edible, but it’s not the greatest.” When asked what they felt would make healthy food more enticing in the cafeteria the informants explained that food needs to be fresh and appealing. In reference to the food service company one school staff member stated “I actually think that you know, I appreciate that they had their business changed, but I think they show a remarkable lack of imagination”, the administrator further explained that “...if they offered these kids food that was nutritious and interesting, they would sell it...”. One student suggested “And I don’t know, I’m just like got to have the healthy food that you actually like the taste of” and another student added “But like, I don’t know, there just should be more healthy like varieties and stuff like. If they offered like, if I could buy an orange at the cafeteria I would.” Other students agreed that the cafeteria should offer more fruit. Moreover, the teachers offered the following suggestions, “...if it was made fresh and you could put more healthier vegetables in there, you might be more apt to purchase that food...” and “I think kids will eat this stuff if its’ interesting.” There was consensus amongst informants that the cafeteria has lost money and use of the cafeteria could be increased if they would offer more healthy options that are interesting, appealing, fresh and tasty.

Furthermore, informants believed that appropriate pricing could help boost sales of healthy food. The administrator explained that often the unhealthy foods in the cafeteria were less expensive than healthy foods. The administrator also engaged in discussions with students, parents, staff and the food service provider about how to rectify this issue. When parents were asked why their children choose not to eat in the cafeteria one parent responded, “Probably because ahh healthy food is more expensive than the fries and the...”. The teachers also agreed that healthier options in the cafeteria are too expensive. One teacher stated, “The expense, some of the stuff is pretty expensive for being cold, where you know, umm, a special – I mean four fifty, fine, but it’s cold. Like it’s a wrap.”

Students also made it clear that cost is a main factor in deciding which foods to purchase:

So, like I know when I was a kid and whatever, like I was, my parents always stressed to be healthy, but now it’s like fast food is cheaper and whatever...Cause when you go there, you’re going to say well, I only have five dollars: it’s going to buy me this meal instead of the healthier meal. Because the healthier meal and like [student’s name] said, the healthier drink and everything is always more expensive...

Another student exclaimed, “Fast food should be more expensive...than healthy food. Like a can of pop shouldn’t be cheaper than milk or something like that. Like something that you actually should be eating.” This was a statement to which most students in the focus group nodded in agreement. Hence, most informants suggested that appropriate and

competitive pricing of nutritious options would help to sell more healthy foods and consequently boost cafeteria sales while supporting the SNP initiative.

Students in secondary school experience greater autonomy and choice. It was assumed that students in *School Three* are more likely to leave the school grounds and go to fast-food restaurants and convenience stores at lunch. One EA argued:

Umm, but on a whole, I mean with so many things so close to this school it's very easy for them to bring a couple dollars...And go get something...Versus elementary school, or places where they're not allowed to leave, you can, I think you can regulate it they're better...

The close proximity of fast-food restaurants to this school makes fast-food more enticing: "they [the students] can just walk at lunchtime, they can walk down the street to Mac's and get whatever junk fix they need." Another EA explained, "Mac's is like two blocks away...So there's lots of slurpees in the warmer weather ...". Informants indicated the number of students that access restaurants during the lunch period increases by grade level and they attributed this to increased access to transportation in the older grades. The ability to drive a vehicle is unique to the secondary school community. According to the custodian, "There's quite a few kids that go out. I guess grade nines not as much and tens. But by the time they're sixteen, like...they go out...you go out and eat." A student further explained:

Umm, I know like when, cause I'm in grade twelve, a lot of people, a lot of us have cars...So we just go home and eat lunch. But I know like, kind of progresses, I know like in nine and ten, you kind of stay in the cafeteria and you get what's there and in eleven you kind of...Want to walk around or whatever ...

Another student added “If we don’t like what’s being sold in our cafeteria, we can just go get a burger or whatever.”

Some informants based the opinion that students are visiting fast-food restaurants at lunch on what students bring into the school during or after the lunch period, “The amount of, of fast food that enters the building is very disconcerting.” School staff have observed students bringing in slurpees when the weather is warm as well they commented on seeing students consuming chips. Informants in this school report that proximity of fast-food aided by the ability to drive and access to vehicles functions as a barrier to SNP implementation.

Theme 3: Communication.

Informants in this school indicated the occurrence of effective communication, for instance, when asked about guidelines all key informants groups were aware that a SNP was in place at their school. Students attributed their awareness of the SNP initiative to events that had taken place in the school: “I know there’s guidelines just because the cafeteria doesn’t sell like fries or anything anymore...”. Teachers indicated that they have been communicating the policy via conversations with their students, “...so we’ve had numerous conversations about you know is this, is this a healthy snack or a health drink?...Or...you know so just to get the communication going. I think that’s a positive thing to do with the policy.” Some school courses also include discussion of SNP guidelines, as one student explained, “Umm, I’ve had to do it [learn SNP guidelines] in a couple of my classes...Umm, I, in foods and I think in science at one point too.”

The administrator explained that posters and bulletin boards are used as one means of communicating SNP in this school. During observations it was noted that

hallway bulletin boards contained information on the following nutritional issues: dieting and eating disorders, danger of consuming energy drinks and a visual display created by students depicting the amount of salt and sugar in many popular fast-food items. These types of displays do not necessarily convey that there is a SNP however, it contributes to awareness about nutrition.

Moreover, *School Three* also communicated SNP guidelines using resources provided by the government of Manitoba. When asked if familiar with the SNP guidelines one student confirmed, “Aren’t they on the wall outside of like inside the cafeteria right beside..?... It is... And it’s a huge poster.” Through observations it was determined that the poster to which this student was referring is the *Guide to Foods Served in Schools*, a poster provided by the Government of Manitoba as a SNP resource, and is located prominently within the school cafeteria. It is evidenced that *School Three* has been communicating the SNP initiative by way of mouth, visual display and through their actions. In this school, communication functions more as an enabler than as a barrier to SNP implementation and impact.

Theme 4: Impact.

School environment.

The primary impact of SNP on the school environment has been to food sales. For example, the administrator indicated that students “...can no longer buy carbonated drinks.” Other informants indicated that carbonated beverages used to be sold in the cafeteria and drink machine prior to the SNP. The drink machine now contains 100% fruit juice, and water. The cafeteria sells these products as well as white milk, chocolate milk and smoothies.

According to the administrator, "... Like slurpees, slushies we stopped selling those here... you know, uh cause those, so that slushy machine went out too. But, now they sell smoothies...you know, which is a fruit, just fruit based...so that's healthier." The cafeteria operator also indicated that she used to sell coffee but has not been able to since the SNP was implemented. Additionally, she indicated that students were still making beverage purchases despite the shift: "well they're buying a lot more juice than they used to but they've got no other choices- juice or water or milk"

Furthermore, the administrator indicated that due to SNP their cafeteria no longer offered deep fried french fries but they could sell baked french fries. The administrator explained that they made a statement because "...the deep fryers gone, heh, it's out of the building... so that makes it uh, that makes it much simpler." The cafeteria operator verified that deep fryers were removed from the school in 2009. However, it was not established who made the decision to remove the deep fryer.

Other changes to foods sold in the cafeteria, as indicated by the cafeteria operator, included, all products are "made in the oven...or boiled". She also indicated that "they're [the students'] eating a lot more salads and sandwiches than they used to." Other changes to food sales include foods sold in snack vending machines, the custodian indicated that "...there's more nutritional, like uh not chips but uh like different kinds of bars now ...in a couple of machines they've put in". Moreover, they are currently selling granola bars, sun chips and baked chips in the vending machines.

Individual.

Enhanced awareness of nutrition, nutrition related health issues and the SNP were the most often cited impact that the initiative had on all three schools in this study. In *School Three*, one teacher listed some of the activities the school had introduced to increase student awareness of nutrition:

We had a snack committee start, I think every was it the last: about two years ago, yeah, or I thought it was at, yeah from the last retreat, but umm, which had you know student numbers and umm, I actually came out the same as the mandates, so and you know we got, that's I think when they removed the ahh drink machines and err, the pop from the drink machines and the deep fryers and I think kids started getting a little bit more aware of, of Nutritional policies and stuff.

Another teacher concurred with this statement and added that teachers have started to have more conversation around food and nutrition: "... And sometimes it leads to a good discussion on why it's not the healthiest choice. And what are some other options, so, I, I think the conversations is the best thing. Like I mean they may not agree, but at least they are becoming more informed." The teachers and the administrator offered various examples and stories about how aspects of the SNP have increased student awareness of food and nutrition.

The students demonstrated an awareness of nutrition and nutritional related issues: "I don't know, I was just thinking about like McDonalds and stuff like they have salads and stuff, but it's like the same amount of calories as like burgers and I think that that's really stupid." They were also aware of how to access nutrition information when

dining out, “Even at McDonalds. Umm, every single place mat, it has all the nutrition facts in everything that you’re eating.” Furthermore, they demonstrated an understanding of caloric intake and the risks of eating fast-food, “If you go to McDonalds and in one day have like two large fries, two drinks and then even something small like even a small burger, you already maxed out your calories. Way over the top.” Hence, key informants believed that nutritional awareness was one impact that the SNP had on students and during the student focus group it was evidenced that children had an awareness and understanding of the importance of proper nutrition.

Similar to the other cases in this study, awareness was the most common individual impact but, some informants also reported change in student behaviour. The main behaviour change was related to students’ beverage consumption, as one teacher stated:

...one thing that I noticed and I was really impressed with is – kids if they ask can I go get a drink or whatever or from the cafeteria – a lot of them come back with bottled water. You know, like back in the day ahh, it would have been pop or...

Other teachers concurred with this observation:

And if I can add, they, they’re absolutely right, they could go to Mac’s and buy it [soda pop], but as far as I can see, they’re not. I’m not seeing the cans... They’re cans aren’t filling our recycling bins. For the most part, if they’re bringing can drinks, they’re buying it here, that it’s orange juice.

Choice of beverage consumption has been one positive behavioural impact that has stemmed from the SNP initiative.

Cross-Case Analysis

Differences between elementary and secondary age groups.

In this section all themes and sub-themes that fit these criteria will be mentioned, however, just because a theme is listed here this does not certify that it is necessarily related to age difference, this will be explored later. The themes that surfaced in elementary schools but not in the secondary school include difference of enforcement between and within schools, implementation takes time (attitudes and beliefs) and lack of communication. While themes unique to the secondary school include importance of nutrition education, the energy drink issue (attitude and beliefs), successful communication, challenges of cafeteria and the proximity of fast-food restaurants (school and community resources). However, there were no major differences in the degree of impact of SNP across age groups.

Differences attributed to SES of community.

School One and *School Three* are both located in more affluent suburban Winnipeg communities while *School Two* is located in a lower SES, inner city, community. As mentioned previously, listing a theme here does not directly imply its relationship to SES, this relationship will be explored in the discussion section. Themes unique to the inner-city school include: need to inform parents (attitudes and beliefs), difficulty communicating with the community (communication), affordability of healthy food, access to grocery stores, single-parent households, children limited exposure to certain healthy foods, and the challenge of complying with nut allergy rules (school and community resources). The only theme unique to the suburban schools is impact

(behaviour). Hence, it appears the lower SES school faced more barriers to SNP implementation, especially related to community resources, than the more affluent schools in this study.

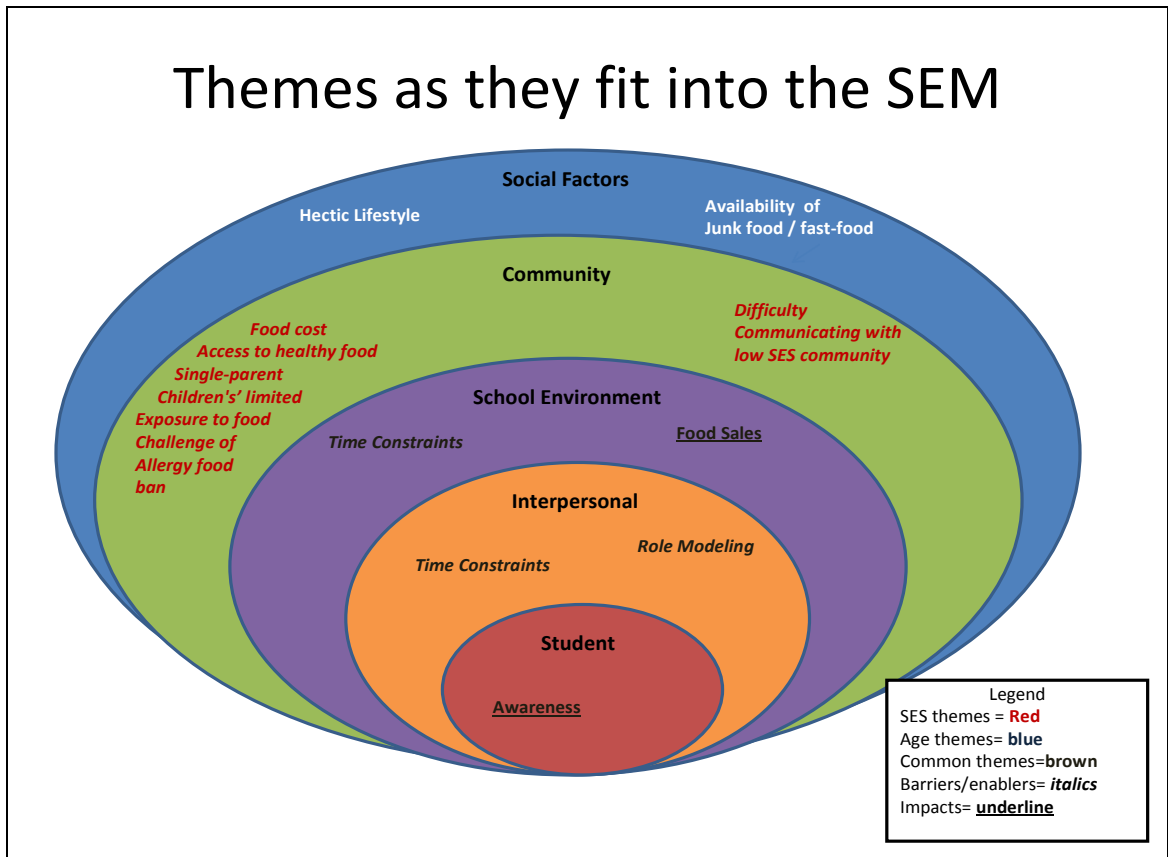
Key themes.

Key themes are those that were common to all three schools. Identification of commonalities helps to recognize issues that are relevant in schools across various communities. The only barrier theme to encompass all three cases was that of attitudes and beliefs (reaction to role-modeling and time constraints). Impacts cited in all three schools include individual (awareness of nutrition) and school environment (changes to food sales). The limited number of common themes suggests the uniqueness of each school's peoples, environment and neighbourhood have a significant impact on SNP implementation.

Socio-ecological Model.

As described in the methodology chapter, themes derived in this study have been organized using the Socio-Ecological Model (SEM). This helps to create an understanding of the various spheres of influence that contribute to the impact of SNP within the school (Gregson et al., 2001). Figure 4.5 places the themes derived from this study on the various spheres of influence in which they exist. Understanding where each theme and sub-theme fits into the SEM will contribute to knowledge and a greater understanding of the issue.

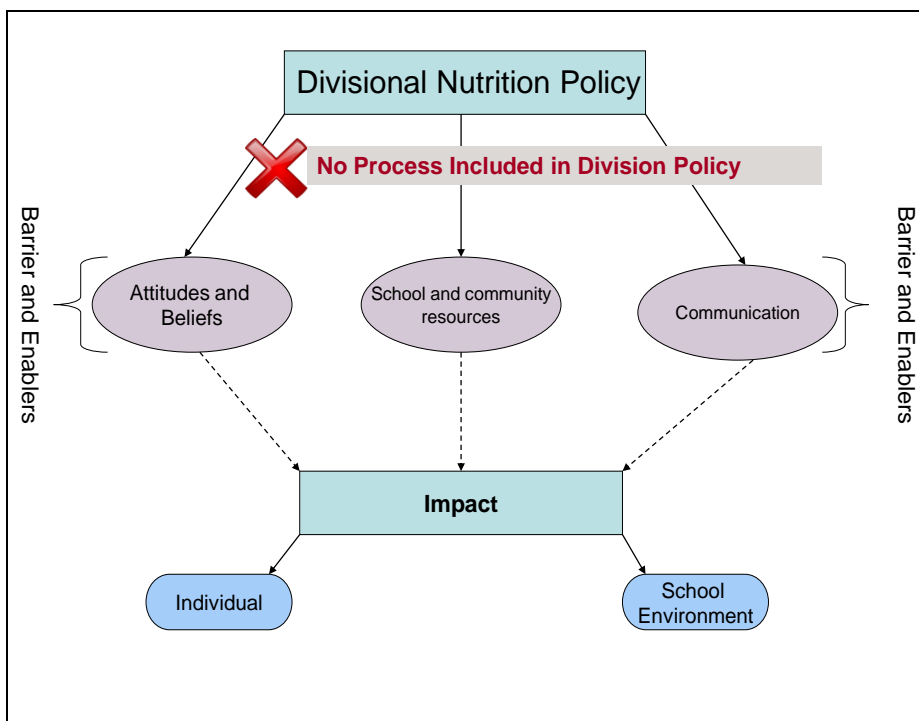
Figure 4.5: The Comprehensive Model



CHAPTER V: DISCUSSION

This section (structured around the model depicted in Figure 5.1) will commence with a brief summary and discussion about the division nutrition policy, the absence of process therein and the role of administrator interpretation. Next the major themes of attitudes and beliefs, and school and community resources will be explored using the Socio-Ecological Model, followed by a discussion of communication as a barrier. Subsequently, the usefulness of key informants will be discussed. Drawing on these findings, recommendations for future action will also be provided. To conclude this chapter, impacts of the SNP initiative will be summarised and analyzed.

Figure 5.1: Model of Overall Themes



Division Policy

The divisional nutrition policy document featured in this study is amongst the most comprehensive in the province (Rutherford & Fieldhouse, 2011). Although it was inclusive, the policy document was difficult to navigate. For instance, several times in the written policy the reader is referred to other sections therein, or to other policies within the division's policy manual. This could cause confusion and result in the policy not being widely utilized. Other researchers have also found that a confusing SNP document, which could result from a lack of flow, is a barrier to SNP implementation (McKenna, 2003).

Another mode of analyzing strength of the divisional SNP is to examine the nature of the document's phrasing. According to researchers in the United States, weak policy language is any form of wording that implies a policy directive is optional as opposed to mandatory. This includes such wording as; "when possible", "is encouraged", "suggests", and "will attempt" (Metos & Nanney, 2007, p.369). Researchers have found that for the most part, SNP goals and procedures use weak language which can be difficult to interpret thereby making it difficult to aptly implement and monitor such procedures (Probart, McDonell, Wierich, Schilling, & Fekete, 2008). Examples of the use of weak language in the current study's divisional nutrition policy include; "All schools are *encouraged* to consider healthy food choices..." and "*When possible*, schools should incorporate nutrition education in the Health curriculum...".

Strong policy language includes such phrases as; "shall", "will", "must" and "required" (Metos & Nanney, 2007 p.369). An example of the use of strong language in the divisional SNP, featured in this study, relates to changes to vending machines: "thou

shall [sic]offer ...”. Interestingly, changes to beverage machines were one of the most commonly cited changes to the school environment. Although it may seem that more directive language is desirable, evidence suggests that general statements are more likely to be implemented as compared to those that are specific (Probart et al., 2008).

Determining the effect of policy language on SNP compliance in Manitoba is an area that requires further research.

The current study’s division nutrition policy stipulates that outcomes of SNP should be communicated to the Parent Association Council (PAC) and to Manitoba Education Citizenship and Youth (MECY) (this was a component of the original policy directive provided by the Government of Manitoba), however, no specific guidelines regarding how changes are to be monitored were included. This is not unusual, in fact, fewer than 60% of Manitoba divisional SNPs contain instructions for reporting and accountability (Rutherford & Fieldhouse, 2011). In the *Manitoba School Nutrition Handbook*, monitoring and evaluating changes have been indicated as the fourth of four steps in developing SNPs (Healthy Child Manitoba, 2006). Lack of instruction for monitoring and accountability is not unique to Manitoba, researchers in the United States report that less than one third of schools surveyed addressed monitoring within their SNPs (Greves & Rivara, 2006). Findings of this study are consistent with other literature which has established that while progress has been made regarding SNP development, little has been done at the school or school division level to monitor SNP implementation (Longley, & Sneed, 2009).

Importance of process.

The divisional policy document used by the schools in this study, included general statements such as, “pricing practices for foods sold in schools shall encourage students...”. However, it contained no indication of how these procedures should be implemented. It was suggested in this study that determining method of implementation therefore, becomes the responsibility of school administrators. Similarly, other studies have found that SNPs are implemented to varying degrees even when following one divisional nutrition policy (Cargo, Salsberg, Delormier, Desrosiers, & MacCauley, 2006). Furthermore, the divisional SNP in this study did not contain any indication of how long the process of implementation was expected to take and the lack of a timeline caused confusion amongst administrators. In some instances it seems that lack of a timeline was used as an excuse for not having implemented some aspects of the SNP. Participants in other studies have indicated that a detailed action plan authorized by an administrator is integral for successful implementation but, this suggestion was not offered by key informants in the current study (Austin, Fung, Cohen-Bearak, Wardle, & Cheung, 2006).

Without any indication of how procedures are to be implemented in schools, policy interpretation is left to the administrator’s discretion. This has the benefit of allowing schools to adopt or adapt policy components to meet the needs of their own community. However, it also places a major onus on administrators to interpret and implement. If the administrator does not perceive nutrition to be of high importance than the SNP may not be rigorously implemented in that school.

Policy-perception-implementation

As there was no indication of process and timeline, implementation of the SNP varied between schools. A common perception of the SNP in this study is that it was a general guideline, the stringency of which was based on the administrator's discretion. Similar findings have resulted from SNP evaluations in other provinces (McKenna, 2003). Although teachers in the current study did not say it explicitly, it is probable that the attitude of SNP being only a guideline is due to the utilization of weak language and the variability in implementation may be attributed to the lack of process.

The comprehensiveness of a nutrition policy does not necessarily equate to usefulness. The current study's divisional SNP was difficult to follow, and did not include detailed instructions for implementation. Therefore, implementation in each school was based on the administrators' interpretation of the policy and perception of nutrition. This concept will surface multiple times during the discussion and is the primary influencing factor for many of the barriers, enablers and impacts that will be discussed.

Recommendations.

School divisions should be encouraged to provide policies that use simple phrasing and are easy to follow. The Government of Manitoba should encourage divisions to: incorporate simple, unambiguous wording, to include a plan for accountability and monitoring, and a timeline for policy implementation. A website tutorial or training session that provides a step by step process to creating user-friendly SNPs is one way to support this effort.

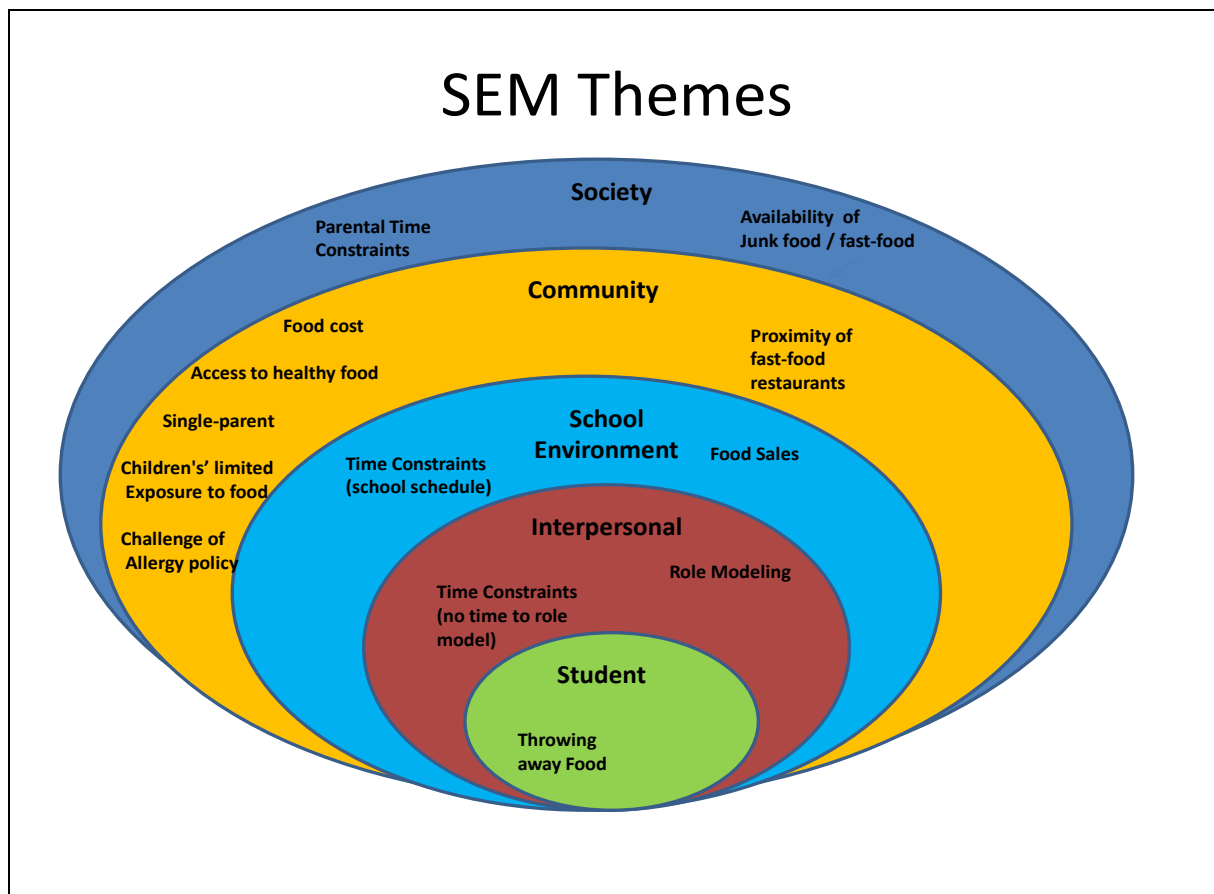
Barriers/Enablers

Barriers and enablers for this study were divided into three main themes: negative attitudes and beliefs toward nutrition and the SNP, limited school and community capacity and lack of communication. The Social Ecological Model (SEM) will be used to guide the discussion related to the various aspects (sub-themes) surrounding attitudes and beliefs and school and community resources. Because communication is a theme that cuts across different spheres of influence it will be discussed separately.

Barriers within the Socio-ecological Model.

As mentioned in the literature review chapter, the SEM has been used as the theoretical lens through which this study was viewed (Figure 5.2). According to the SEM, an individual's behaviour is influenced by their environment which is multi-layered. These layers are termed 'spheres of influence' and to fully comprehend a phenomenon the influence of each level must be considered, (starting from the broadest most encompassing and working inward) including: society, community, school environment, interpersonal relationships within the school, and the student. By structuring the discussion using the SEM it helped to create an understanding of the root of these barriers and was useful in determining where to direct resources and changes.

Figure 5.2: Socio-Ecological Model Themes



Society.

Society is the broadest sphere of the SEM, and encompasses shared experiences of the general public, this is the level targeted by national and provincial policies and laws (Gregson et al., 2001). Issues related to the general public that arose during this study were time constraints on parents and the availability of fast, easy convenience food. These have been categorised as societal issues because they relate to social norms and expectations common in North America (Jabs & Devine, 2006). Resolving these concerns is beyond the scope and capacity of SNP. However, as will be discussed, SNP

can address the impact of these issues on children by supporting changes within the school setting.

Key informants reported that a shortage of time influences SNP implementation negatively in many ways, including: the pervasiveness of convenience foods in children's lunches, no time to implement SNP in schools, and too little time for children to consume their lunches. Participants identified the frequent inclusion of 'unhealthy' convenience food in children's bag lunches as a barrier to SNP. Lunchables™ (crackers, cheese, salami), Hot Rods (dried beef), chips, and candy are examples of commonly cited and observed (during researcher observations) convenience foods contained within bagged lunches. It was suggested, during interviews with school personnel and confirmed during parent focus groups, that pervasiveness of these foods is related to conflicting demands on parents' time. This is not a unique experience, evidence suggests that feelings of time scarcity are a common and newly emerging phenomenon within North American culture and that parental time constraints have led to decreased time spent on food preparation with a corresponding increase in the reliance on fast-food, restaurants and pre-packaged food (Jabs & Devine, 2006). The severity of parental time constraints became increasingly evident during recruitment for parent focus groups as many parents indicated lack of time as the reason they were not able to participate. Other researchers have had similar difficulties recruiting parents for focus groups because it is hard to find a time in which parents can meet (MacLellan, Holland, Taylor, McKenna & Hernandez, 2010).

Reasons for the parental time crunch were varied. In the suburban schools, work schedules and child extracurricular activities were found to contribute. Another contributing factor, suggested by key informants, was the increase in two parent working

families; this belief is substantiated in the academic literature (Jabs & Devine, 2006). In the inner city school, informants attributed parent time scarcity to proximity of grocery stores, issues related to single-parenting, and the prevalence of parents working long hours and multiple jobs. Evidence suggests that the experience of parents in this study is common, especially for parents in low SES communities, many of which are involved with shift work or hold multiple jobs in order to earn an adequate income (Jabs & Devine). Parents and school staff suggested that it was common for parents, especially single-mothers in *School Two*, to work long work hours and inconsistent schedules leading to fatigue and limited time available for food procurement and preparation for the family, similar findings have been reported in other studies (Jabs & Devine).

Recommendations.

Many parents have limited time available to prepare homemade, nutritious meals. This demonstrates the importance of supporting child nutrition within the school setting because it is becoming increasingly difficult for some parents to do so at home. Several resources, tools and tips for parents and schools can be accessed from the healthy schools website (Healthy Schools Manitoba, n.d.). Schools should be encouraged to make use of these resources and to make them known to parents, students and staff. Schools could work with parents and students to create a school cookbook of healthy, easy, quick, budget conscious recipes. Child self-sufficiency could be enhanced by teaching students how to prepare easy, quick healthy lunches and how to select healthy lunches when dining out.

Community.

Community is the second broadest sphere in the SEM model. This study incorporated schools from both suburban and inner-city communities, enabling the assessment of impact that the community (catchment area and neighbourhood for each school) has on implementation of SNP. Limited neighborhood resources and low socio-economic status (SES) of families with children in the school were found to have a substantial influence on SNP implementation. Some barriers unique to the low SES, inner-city community involved in this study, are: scarcity of affordable grocery stores, prevalence and unique difficulties faced by single-parent households, and limited exposure to fruits and vegetables.

Several key informants indicated a lack of grocery stores in the community as a substantial barrier to acquiring nutritious foods, particularly fresh vegetables and fruits. Furthermore, parents indicated that making use of lower-priced superstores, was challenging as they need to use public transit. According to the 2006 census, access to personal transportation is much lower in the low SES neighborhood (compared to the others used in this study) consequently, a higher percentage of people in this area rely on public transportation (City of Winnipeg, 2009). Limited access to affordable supermarkets in inner-city communities within Winnipeg is a widespread issue for which various inner-city agencies have been working to devise supports and solutions (Malabar, 2009). Access to affordable grocery stores is not unique to low-income neighbourhoods in Winnipeg, researchers in the United States found that compared to higher-income neighbourhoods, lower-income urban areas tend to have fewer supermarkets and more small grocers (Moore, & Diez-Roux, 2006; Powell, Slater, Mirtcheva, Bao & Chaloupka,

2007). Key informants in the current study indicated that accessing food at local convenience stores was expensive, this is supported in the literature as research suggests that large supermarkets provide more product choices and lower prices than small grocers and convenience stores (Blaylock, Smallwood, Kassel, Variyam, & Aldrich, 1999; Powell et al.). Food insecurity is a common barrier to good nutrition in lower SES communities which is further exacerbated by limited accessibility of affordably priced groceries (Bauer, Patel, Prokop, & Austin, 2006; Harrison, & Jackson, 2009). Therefore, evidence suggests that without supermarkets in close proximity to low SES communities, some residents do not have sufficient opportunity to access healthy food options using socially acceptable methods.

The prevalence of single-female parent families in the *School Two* community is an added barrier to food procurement and to SNP impact. When compared to the neighbourhoods of the other schools involved in this study, the neighbourhood of *School Two* was found to have more single female parent households and according to 2006 census data, approximately 60% of lone-female parent households in this neighbourhood are classified as low-income (City of Winnipeg, 2009). Various key informants indicated several additional struggles of single-mothers which include: lower family income, pressure to work more than one job to provide for the family, and the difficulty of finding time to procure and prepare food. The struggles of single-mothers are not restricted to the inner-city neighbourhood included in this study, according to the Canadian Community Health Survey (Cycle 2.2), 22.5% of lone-parent households in Canada are food insecure whereas only 7.6 of two-parent families have been identified as such (Health Canada, 2004).

Results of the current study demonstrate that families residing in the low-income, inner-city community have less opportunity to access healthy, nutritious and fresh food (especially fruits and vegetables) as compared to families living in the more affluent-suburban communities, and these findings are supported in the literature (Kendall, Olson, & Frongillo, 1996). Thus, it is not surprising that key informants in *School Two* reported that many students do not achieve adequate intake of fruits and vegetables on a regular basis and that they were not familiar with some varieties of fruits and vegetables. Key informants also suggested that many children were often reluctant to try new foods but would do so after some encouragement. Reluctance to try new foods is a well documented phenomenon as children tend stick to eating foods to which they are familiar (Cooke, 2007, Fieldhouse, 1996). Encouraging data show that offering children unfamiliar vegetables and fruits on a regular basis has resulted in consumption and acceptance of new food (Fieldhouse, 2011; Wardle, Herrera, Cooke & Gibson, 2003). Since few opportunities to try fruits and vegetables are available in low SES communities, schools in these areas can play an integral role in making sure children are exposed to vegetables and fruits through curriculum, nourishment programs and food sales.

Another issue experienced in the low SES community is the struggle caused by a divisional ban on peanut butter in schools. Interestingly, informants frequently indicated a conflict between the goals of the allergy policy and the school nutrition policy in this school. Peanut butter was a staple food for many families in this community and was traditionally used as an affordable, non-perishable standby for children's lunches. Introduction of an allergy policy required several parents to switch to providing children

with less healthy, convenient options. This was a prevalent issue in this community, yet a review of other SNP evaluation studies revealed no mention of this concern, suggesting the need for further research.

Although community plays an integral role for child nutrition in low-income areas, it is also of some concern for all schools. For example, all schools in this study cited the close proximity of fast-food restaurants or convenience stores as a hindrance to SNP, particularly to the sale of nutritious food. This was especially evident in the high school where it was reported by staff and students that students with access to vehicles were more likely to visit fast-food restaurants during the school day. Researcher observations, during this study, revealed more fast food restaurants near to the secondary school as compared to the elementary schools. These are not unique findings; it has been established that fast-food restaurants tend to be clustered around schools, most schools in North American cities have at least one fast-food restaurant or convenience store within walking distance and there are generally a greater quantity of fast-food restaurants located near secondary schools as compared to elementary and middle year schools in urban areas (Austin et al. 2005; Kwate, & Loh, 2010; Robitaille, Bergeron, & Lasnier, 2010; Simon, Kwan, Angelescu, Shih, Fielding, 2008).

This study has demonstrated that the community can have a considerable influence on child nutrition. Acknowledging the influence of community and society on child nutrition, several school personnel conveyed an attitude that controlling child nutrition is beyond their ability; similar findings have been reported by other SNP researchers (Roberts, Pobocik, Deek, Besgrove & Prostime, 2009). Meanwhile, other key informants, in the current study, offered suggestions for targeting change in the

community. They identified parents as having a crucial influence on child nutrition and therefore suggested that the SNP initiative ought to include more education and communication aimed at parents and guardians. Observations, informant interviews, and a review of documentation (the SNP, and schools websites) revealed few indications of education and outreach directed toward parents. Lack of parent involvement is not unique to the schools in this study, a content analysis of Manitoba school division nutrition policies indicated that few SNPs have included stipulations for parent outreach (Rutherford, & Fieldhouse, 2011). Likewise, other researchers have found family education programs to be the least commonly incorporated component of school nutrition and physical activity policies (Hammerschmidt, Tackett, & Golzynski, 2011). Researchers have established a direct relationship between the amount of produce consumed by mothers and their children, suggesting the importance of parent role-modeling and influence and this could be supported through parent outreach (Sylvestre, O'Loughlin, Gray-Donald, Hanley, & Paradis, 2007).

Recommendations.

The Government of Manitoba should support parents in making healthy choices for their children by recommending schools to incorporate a plan for parent outreach as part of the SNP initiative and by providing resources to assist implementation. Although parent outreach is important, if parents cannot access or afford to purchase nutritious food other means of provision need to be identified. Recognizing this need, the Government of Manitoba has instituted various nourishment programs for low income communities. For example, a Fruit and Vegetable Snack Pilot Program has been piloted to 26 schools that were deemed high-need (e.g., low-income, remote or rural). This program provides

funding for pilot schools to supply fruits and vegetable snacks with the aim of providing children with nourishment, exposure to and education about fruit and vegetables. Currently, the pilot program is being evaluated with the goal of creating a sustainable fruit and vegetable program that can be offered to high-need schools throughout Manitoba (Child Nutrition Council of Manitoba, n.d.). It is anticipated that this will help to support low SES schools, as school fruit and vegetable programs in other areas have been found to increase fruit and vegetable intake (Buzby, Guthrie, & Kantor, 2003; Day, Strange, McKay, & Naylor, 2009). There are also other nourishment programs being run in low SES schools including: breakfast programs and milk programs (Manitoba Healthy and Healthy Living, n.d). Additionally, food sales within the school should support and provide nutritious, healthy options for students from low-income families (this will be discussed in further detail in the following section).

Schools should take advantage of opportunities such as Parent-teacher nights, sporting events, and celebrations (or any other events that bring parents into the school) to advertise and educate about the SNP (e.g., set up a kiosk, bulletin, or give out pamphlets). Schools that have the capacity could also offer cooking lessons, grocery budgeting lessons or cooking clubs for parents and students.

School Environment.

In this study, the third sphere of the SEM is the school environment. Conceptually, environment here encompasses school related policies, rules, norms and values, schedules and the physical structure and layout of the school and yard. The school

environment served as a barrier to SNP success in several ways including: limitations in the time schedule, food services, storage capacity, and conflicting school policies.

Lack of time in the school day combined with competing demands and too few staff were identified as barriers to implementation; this is a finding consistent with other studies (Austin et al., 2006; Hammerschmidt et al., 2011; Longley & Sneed, 2009; MacLellan, Taylor & Freeze, 2009). Evidence suggests that one reason for lack of time and resources allotted for SNP is that supporting child nutrition is not the first priority for many schools (Brown et al., 2004; MacLellan et al.; Nollen et al., 2007).

Several key informants believed that children are not always allotted adequate time to consume their lunches. For example, in *School Two*, children stood in a long line to purchase food from the cafeteria and in *School Three*, students were permitted to schedule classes and extracurricular activities (e.g., music, sports) during the lunch hour. This is not unique to the schools in this study, according to researchers in the US, students and staff indicated that the short amount of time allotted for lunch was a barrier to nutrition (Bauer, Yang, & Austin, 2004). Key informants in the current study indicated that children who experience insufficient time to purchase and consume their lunches have been found to access quick, convenient options from the canteen or vending machines, other researchers have reported similar findings (ADA, 2005; Bauer et al.).

Some aspects of school food sales outlets also served as barriers to SNP impact. For instance, the cafeteria in *School Three* is profit based and is contracted to a private company. According to the school administrator, working with the company to make changes to the cafeteria was one of the more difficult aspects of the SNP to implement

because they were met with resistance from the company. The cafeteria operator indicated that cafeteria profit had decreased as a result of SNP implementation. Furthermore, various key informants indicated displeasure with the quality of food being presented in the cafeteria and they questioned its nutritional content, similarly, other SNP evaluations have found that school cafeterias are not providing a desirable selection of good quality, healthy foods (Bauer et al., 2004). It was indicated by the administrator and the cafeteria operator in the current study that one reason for this is that good quality, nutritious foods are generally more expensive thus, food service operators do not generate as much profit and according to SNP researchers, this is a frequent claim made by various key informants (Bauer et al.; McKenna, 2003; Nollen et al., 2007).

It was also found that canteens (in the two elementary schools in this study) were not offering a variety of nutritious options. This was a particular concern in the inner-city school because the majority of students purchased most or all of their lunch at the canteen on any given day and (during researcher observations) no students left the building throughout the lunch period. Hence, this school had an added opportunity to ensure that all children have access to nutritious food at lunch. According to the administrator, one reason they continue to offer unhealthy options is that, due to the low SES of the school community, all foods in the canteen need to be affordably priced. Other barriers cited by key informants include: lack of storage for fresh produce and lack of time for staff to source and access new foods for the canteen. Researchers have found that reducing the relative cost of healthy foods results in increased purchasing of these foods within the school environment (French et al., 2001). Some schools in Manitoba have taken the approach of offering nutritious foods at a lower cost than less healthy options and have

reported positive results such as increased purchases of healthy foods; case examples are included on the Manitoba Healthy Schools website (Manitoba Healthy schools, n.d.).

Recommendations.

Implementing components of SNPs need to be made easy for schools. The government has assisted the process by providing resources that schools can access to assist with implementation. These resources were discussed in detail in the literature review and include such things as; the handbook, a toll free information line, and nourishment programs. However, it is clear that more resources need to be provided to facilitate easier implementation of SNP. Recognising the need for adequate time for lunch consumption, the *Manitoba School Nutrition Handbook* incorporated a suggestion that schools allot ample time for lunch (Manitoba Health and Healthy Living, 2006). However, fewer than 20% of Manitoba schools have included this component in their SNPs (Rutherford & Fieldhouse, 2011).

Further efforts need to be made to provide more nutritious, better quality and more appealing options in the cafeteria. Better communication between cafeteria staff, the food service company and school staff could function to support these efforts. Collaborations between food service companies and dietitians would also help to enhance the companies' understanding of what constitutes nutritious food.

The Manitoba Government should encourage and support schools by further publicizing reports of successful school food service case studies that have been undertaken in Manitoba. They ought to provide suggestions of healthy, easy to store foods that could be sold in the canteen and should pilot models of food service that have

been implemented in other provinces, such as the *Farm to School Salad Bar* (implemented in British Columbia schools) to determine their usefulness in Manitoba schools (B.C. Healthy Living Alliance, 2008).

Interpersonal.

The influence of relationships between key informants on child nutrition is the focus of the second to innermost sphere of the SEM model (Gregson et al., 2001). In this study it was found that some behaviours influencing relationships and interactions between key informants functioned as barriers to SNP implementation including: peer pressure, the unwillingness of some staff members to model healthy eating habits, and the difference of attitude between informants which affected the way in which individuals enforced the SNP.

Several barriers were attributed to peer pressure and were believed to contribute to child nutrition issues, for instance in *School One* it was sited that pressures contributed to the prevalence of: disordered eating behaviours, fear of becoming overweight and subsequent bullying, and children's desire to be provided items such as Lunchables™ for lunch. In *School Three*, peer pressure contributed to the consumption of energy drinks. This phenomenon is not unique to these schools; the food choices of children and adolescents are readily influenced by their peers and Canadian researchers have found child peer pressure to be a barrier to making healthy food choices (Harrison & Jackson, 2009; Moore, Tapper, & Murphy, 2010). Informants in the current study suggested that even when a child knows a food is unhealthy and may want to choose a healthy food they often opt for the unhealthy food due to peer pressure or the desire to 'fit in'. This is a

common occurrence, researchers have reported that when with friends, children feel pressure to eat unhealthy foods since many social activities involving friends often incorporate the consumption of high sugar, high sodium, and energy dense food and it has been found that children would rather eat unhealthy food than be subjected to teasing (Briefel et al., 2009).

Another issue related to peer pressure and peer-modeling in the current study is the popularity of consuming energy drinks. Consumption of energy drinks was an issue in all three schools, with frequent use occurring in the secondary school. Students in the secondary school indicated that they believe this behaviour not to be harmful because it is a popular behaviour and as one student put it; “everyone’s doing it”. This belief is supported by the literature; a large scale American study established that at least one third of youth (aged 12-24) regularly consume energy drinks and small-scale Canadian studies have reported similar findings (Nicholson, 2007; Simon & Mosher, 2007). Adult key informants in the current study were concerned about the health implications of this behaviour. This is a valid concern, according to Dietitians of Canada (2010), the amount of caffeine in an energy drink is far greater than that of an equivalent sized soda and caffeine levels in most energy drinks exceed the recommended levels of caffeine intake for children.

Variation in the degree and mode of implementing and enforcing the nutrition policy was another common concern raised by informants. They suggested that the divisional SNP had been implemented and enforced differently between schools and within schools. Moreover, a widespread attitude amongst school staff and administrators is that the policy should not be strictly enforced and implementation is a time-consuming

process. Variability of enforcement within the schools was mostly related to aspects of the SNP in the classroom such as implementation of curriculum, foods served for class parties, foods given as rewards and the requirement to role model. Variability of enforcement is well documented; other researchers have found that teachers, within the same school, implement aspects of SNP such as role-modeling and encouraging nutritious behaviours to varying degrees (Cargo et al., 2005).

In this study the administrators conveyed an attitude that nutrition policy is a set of guidelines rather than a strict mandate. This attitude toward SNP has also been evidenced in other Canadian SNP evaluation studies (McKenna, 2003). Researchers in the United States have suggested that administrators could benefit from formal training around communicating and providing support for SNP (Brown et al., 2004).

In the elementary schools, role-modeling was an issue of contention amongst teachers. Some teachers viewed role-modeling as an important aspect of the nutrition policy while others felt that the expectation to role model healthy eating habits infringed on their personal rights. Interestingly, the administrators did not appear to be fully aware of the opposition to this policy component and they identified role-modeling as one of the most important aspects of the SNP. Other SNP studies did not report similar findings regarding teacher reaction to the requirement to role-modeling. The negative reaction to role-modeling in this study is concerning because role-modeling and peer-modeling have been found to be effective tools for encouraging children to consume nutritious foods (Hendy & Raudenbush, 2004; Stock, et al., 2007; Story, Lytle, Birnbaum, & Perry, 2002). In 2009, a pilot program called Healthy Buddies was introduced in 20 Manitoba schools to encourage peer to peer role-modeling of healthy behaviours including

nutritious food consumption (Government of Manitoba, 2009). Teacher and peer-modeling have also been suggested as a component of SNPs in the *Manitoba School Nutrition Handbook*, however fewer than 60% of division nutrition policies address teacher modeling and very few address peer-modeling (Manitoba Health and Healthy Living, 2006; Rutherford & Fieldhouse, 2011).

Recommendations.

Findings suggest that the Government of Manitoba needs to provide more support and encouragement for teacher and peer role-modeling as a means of preventing issues related to peer pressure and to encourage nutritious practices. Additionally, the *Manitoba School Nutrition Handbook* contains information about energy drinks (Healthy Child Manitoba, 2006, pp. 21). Schools should be encouraged to use this information to communicate and educate students about the health consequences of energy drink consumption. Schools should consider banning energy drink consumption within the school premises.

Student.

The inner-most sphere of the SEM is the individual, which in this study, has been identified as the student since they are the primary focus. Because it's the inner-most component of the SEM, the student is influenced by all other levels (which have been previously described). However, there are a few behaviours which appear to be somewhat individualized (this is not to say that there aren't external events influencing the behaviour), the main one being disposing of uneaten components of one's lunch in the garbage. This behaviour was identified in both elementary schools. Food waste was not

an expected outcome; several key informants indicated this to be an important issue, while other SNP studies made no mention of this occurrence.

Recommendations.

The *Manitoba School Nutrition Handbook* suggests that reducing food waste could be a component included in SNPs (Healthy Child Manitoba, 2006). However, no school divisions in Manitoba have included stipulations regarding food waste in their nutrition policies (Rutherford & Fieldhouse, 2011). During this study the researcher attended a parent association council meeting at which the issue of food waste was a topic of discussion. This school decided to remove garbage bins for a short period of time and have children take home uneaten foods. The school also added an awareness piece in their school newsletter to communicate to parents about the issue. Schools should be encouraged to limit food waste and ensure that children are consuming their lunches or taking leftover food home. Temporarily removing garbage cans and having children take left-over food home is one way to prevent food waste while allowing parents to see if children are consuming their lunches. School could also set up recycling and composting programs to minimize waste. Involving student participation in these initiatives could serve as an educational opportunity for students.

Communication.

Considering barriers related to attitudes and beliefs and school and community resources within the framework of the SEM has helped to identify the source of these barriers. Nevertheless there was also a very important barrier that cut across all the spheres – communication. An important aspect of a successful SNP initiative is to have

thriving communication occurring between and within the spheres of influence. As will be described in this section, a lack of communication was found to be a barrier in this study.

Ineffective communication surfaced as a central barrier to SNP implementation. In this study, it was the school administrators who were ultimately responsible for determining which components of the SNP were communicated to each key informant group. This was anticipated, since administrators commonly serve as the primary communicator of policies within schools (MacLellan, et al., 2009). The SNP components administrators choose to share are based on their interpretation and understanding of the SNP (Besgrove, 2008; McDonnell, Probart, Weirich, Hartman, & Bailey-Davis, 2006; Roberts et al., 2009). Administrators in this study, selectively communicated specific sections of the SNP which is concerning because evidence suggests that success of SNP requires participation and buy-in from the school community (McDonnell et al.; Roberts et al.).

Administrators, especially those in the elementary schools, started several discussions regarding SNP communication with statements such as; “at first we.....” and “when the policy first came in we...”, indicating strong communication at the outset but little follow through. Similar findings resulted from SNP evaluations in other provinces, such as PEI (MacLellan et al., 2010). This is an issue because schools are not static communities, there is often student and staff turnover as students graduate and staff transfer between schools in the division. Newcomers may not be made aware of the SNP initiative. This is particularly concerning for the schools in lower SES communities, the

administrator in *School Two* indicated that there are many transient families in the neighbourhood and it can be difficult to communicate the policies to them.

Selective and short lived communication efforts made by schools have resulted in insufficient communication about the SNP initiative. When asked about the SNP, key informants were often unsure or unaware of its existence; similar findings have been derived from other studies and have been attributed to ineffective communication (Besgrove, 2008; MacLellan et al., 2010; Roberts et al., 2009). An examination of communication of SNP on Manitoba school websites found few instances of communication occurring directly on the website as well as within any documents posted therein (newsletters, bulletins, meeting minutes, school handbooks, policy manuals) (Rutherford, Fieldhouse, Seyidoglu, & MacDonald, 2010). Evidence suggests a need to encourage and support better communication of SNP.

Recommendations.

Although seldom mentioned during interviews, it was indicated that in the secondary school a nutrition committee was assembled when the policy was first implemented but had since disbanded. Evidence supports the usefulness of nutrition committees comprised of teachers, students, parents, and staff, as a means of communicating and maintaining the SNP initiative (Besgrove, 2008). School Divisions encouraging the formation of school level nutrition committees is one way to enhance SNP communication. Additionally, the Government should require that all schools, at a minimum, provide links to the divisional nutrition policy on their individual school websites. The Manitoba government could assist schools in publicizing school nutrition

policy by providing material and links for schools to include in newsletters and on websites. During this study it was indicated on several occasions that the researcher's presence in the school served as a reminder and motivator for schools to enhance their SNP implementation and communication efforts. Thus, monitoring and evaluation research should be continued.

Impact

School environment.

The most often cited change to the school environment involved foods sales, including food offered: in drink machines, canteens, and cafeterias; for fundraisers; and foods sold for hot lunch days. When informants were asked about changes due to SNP implementation the first response was often related to food sales. Key informants indicated that changes to school fundraisers were a mostly positive experience for the elementary schools, yet, previous studies in Canada have shown fundraising to be a difficult change for schools to implement (McKenna, 2003). Analyses of Manitoba Divisional SNPs show that fundraising has been addressed in over 80% of policies (Rutherford & Fieldhouse, 2011). There have been significant changes in foods sold for fundraising in many schools throughout the province as result of the SNP initiative (Seyidolgu, & Fieldhouse, 2010).

Key informants indicated there have been some changes to foods sold in canteens and cafeterias; however, as discussed previously, it was believed that more changes needed to take place. Contrary to the findings in this study, a survey of Manitoba school environments demonstrated encouraging changes to foods sold in canteens and cafeterias (Seyidoglu, & Fieldhouse, 2010).

Providing an environment conducive to good nutrition will help to support individuals in making appropriate nutrition choices (McKenna, 2003). Although changes to the school food environment do not directly indicate changes to individual behaviour, environmental changes are important. Food sales were an often cited component of the SNP in the current study. However, many key informants even thought that the SNP pertained solely to foods sold in schools, suggesting a need for improved communication of the other components of SNP in order to promote a comprehensive approach to nutrition in schools.

Individual.

Awareness.

Awareness was a frequently mentioned impact of the SNP initiative, while there were few indications that distinguishable changes to nutritional behaviour of the individual student had occurred. However, this is not to say that the impact is insignificant. According to the Trans Theoretical Model of Health Behaviour Change, a popular theory used to measure health program and policy implementation, an individual must pass through various stages of change before health behaviour is permanently adopted. These stages of change are: pre-contemplation (an individual is not aware that changes are needed), contemplation (an individual is aware and contemplating changes), preparation, action and maintenance (DiClemente, Crosby, Kegler, 2009). Awareness fits into the second stage of change, “contemplation”. Since the SNP has only been implemented in schools for a short period of time these findings are not discouraging. According to the Stages of Change Model, a similar evaluation study repeated in a few

years time should find that students' health behaviours have reached the action or maintenance stages of change. As the majority of SNP evaluations have only taken place over the past decade, no long-term studies indicating a progression of change were located.

Behaviour change.

This study did not attempt to measure behaviour changes, but a question regarding changes to behaviour from the informant perspective were included in the interview scripts (Appendix 7.1-7.6). Change to student nutrition behaviour was an impact of SNP implementation cited by some key informants in *School One* and *School Three*. However, no mention of behaviour change occurred in *School two*. Behaviour changes observed by informants included calmer students attributed to less 'junk' food being consumed, and healthier beverage choices being made. Although the impact of behaviour did arise in *Schools One* and *Three*, it was mentioned on only a few occasions. Thus, indicating that significant behaviour change has not yet occurred.

Benefit of Using Multiple Informant Perspectives

As discussed in Chapter 3 (Methodology), in addition to establishing the type of impact the SNP has had, the multiple embedded case study approach also allowed for the incorporation of multiple key informant perspectives. Key informants in this study included: teachers, EA's, students, parents, administrators, custodians, and food service operators. The benefits of using each group of key informants will be discussed in this section.

Administrators.

Administrators were most familiar with procedures of the SNP as compared to the other key informants in this study. The administrators identified that it was their responsibility to implement the SNP initiative in their respective schools. They were a useful source of insight into the steps taken to implement the SNP within the school for example, the administrator of *School One* explained, "...I was expected to be the person in the leadership position that would make sure that the policy was made familiar to everybody and that we started to follow it as soon as possible...". A similar role of administrators has been reported in other studies (MacLellan et al., 2009). Interestingly, the administrators recognized that it was their interpretation and level of buy-in toward the SNP that would impact the level and mode of SNP implementation. For example, when discussing the difference in implementation of the SNP between schools in the division one administrator offered: "it's not in the policy ...but it's a way people interpret policies". The importance of administrator support has also been acknowledged in other studies (Austin et al., 2006).

The administrators were not always oblivious to the barriers to SNP implementation. For instance, the administrator of *School One* acknowledged that change to fundraising was an issue for parents and role-modeling was an issue with teachers. Nonetheless, it is apparent that the administrators are not aware of the intensity of these barriers. The administrator in *School Two* indicated that the SNP "... wasn't hard to implement. You just did it". The administrator further explained that although there was some initial resistance to SNP changes it was short lived and now all parties accepted these changes. Similarly the administrator in *School Three* agreed there were

some issues implementing SNP however the administrator stated, “I think that we’ve been able to incorporate it [SNP] and I , we haven’t had a huge backlash or anything...” . The administer of *School One* exclaimed :“...and modeling that has been really worthwhile. I think that’s one of the best things about the, the way the policy has rolled out at our school anyway”. However, contrary to the administrators’ perspective other key informant groups identified that they still have issues regarding some components of SNP. Since few studies have incorporated the perspectives of administrators, students and staff it is not known whether this is a common occurrence, but, researchers have demonstrated differing viewpoints on SNP implementation between administrators and food service operators signifying the importance of incorporating additional perspectives (McDonnell et al., 2006).

Teachers.

In this study, teachers provided useful information about the impact of SNP in the class-room, school environment, and on students and staff. Conversation surrounding the impact on school staff was primarily a reaction to policy stipulations about role-modeling: “...They were, they were just guidelines for people to, to try and you know, not abide by, but work towards. And a lot of it was on modeling”. Several teachers demonstrated a strong reaction toward role-modeling stipulations; similar reactions have not been reported in other evaluation studies.

In the current study, teachers provided insight into how the SNP was implemented in their classrooms including changes to: foods allowed for consumption in classroom, nutrition curriculum, foods allowed for special events in the classroom, and

foods given as class rewards. In the secondary school, many students did not allot themselves sufficient time for lunch and would therefore consume their lunches in class. This offered an opportunity for teachers to impact student food consumption and some teachers indicated allowing students to eat only nutritious foods during class time. Teachers in elementary schools also had the opportunity to impact food consumption in the classroom, for example, in reference to foods served for a special Christmas celebration, one teacher indicated “we always had a healthy snack for the kids and we talk about what food groups it came from ...”. In this study, teachers also indicated how SNP was being incorporated into the curriculum: “We teach nutrition, that’s part of the curriculum”. In *School Two* teachers explained that nutrition was always a part of the science and health curriculum but after implementation of the SNP curriculum was expanded: “ And it [nutrition curriculum] seems to have come in, in some ways, like last year...” and another teacher added “Yeah, cause we taught, we did the food guide last year ...”. This is consistent with the findings of other SNP studies (Bauer et al., 2006).

Education Assistants.

In *School Two* and *School Three* the education assistants (EAs) were also present in the lunch rooms and some EAs also served as lunch supervisors. In *School One*, they helped with lunch supervision however, there were also volunteers who helped with lunch and were included in the EA focus group. Since the majority of focus group participants were EAs the entire group has been collectively referred to as EAs. No SNP studies were located which specifically included interviews or focus groups with education assistants (a.k.a. teaching assistants, student aids), some researchers conducted

interviews with school staff but did not specify the roles of staff, therefore comparisons between studies cannot be made.

In this study, input of EAs were valuable to the results. They were often present in the classroom so they were able to corroborate and expand information shared by teachers, for example one EA described an in-class program, “we have a snack program, we run and everybody gets a nutritious snack. So today was cheese and crackers. So there’s fruits and vegetables and stuff like that”. They also provided insight into discussions that were occurring in the classroom: “Ok. Well yesterday it was, it was good. The phys ed teacher talked to the kids about the monster drinks and the jolt drinks quite a bit”. Hence, EA’s are useful to corroborate information provided by teachers. EA corroboration of classroom events was useful because classroom observations were not included in this study.

Furthermore, EA’s offered insight into what occurs during the lunch period. They highlighted changes to food sales and they indicated that elementary school children were throwing food in the garbage. One EA exclaimed: “I do, I do garbage’s, so I see full sandwiches, I see full bags of fruit, full apples, oranges, full juice boxes. I’ve seen yogurt, I’ve seen it all in the garbages. Not even opened”. Finally, EA’s provided valuable insight into what children bring for lunch. For example, when asked what students bring for lunch one EA in *School three* offered: “A lot of those umm frozen Michaelina’s and umm that little Kraft dinner...”. Thus, EA’s were useful to confirm and expand on information provided by teachers regarding nutrition in the classrooms, and they offered insight into what the children are and are not eating for lunch.

Students.

Students in all three schools, especially the elementary schools, indicated little knowledge of SNP existence and could not provide insight into the implementation of the SNP. This is not unique, an SNP evaluation involving students and parents in PEI found that students had limited familiarity of SNPs (MacLellan et al., 2010). Nonetheless, students contributed useful information to the current study. For example, the lack of familiarity of the SNP demonstrated by students is evidence of a lack of communication of the SNP. This is not fully unexpected as during interviews in *School one* and *School Two*, the administrators made no mention of communication with students when discussing how the SNP was communicated in their school. Lack of communication has been a commonly reported barrier in SNP evaluations (MacLellan et al.; Rutherford et al., 2010).

In *School Three* many key informant groups claimed that students frequent the nearby fast-food restaurants for lunch. Since there are many fast-food restaurants for students to choose from, it was difficult to observe if this claim was accurate, thus in this situation the students were able to certify the claims made by other key informants. When the researcher asked “If you are not eating at school during lunch period, where do you go?” one student offered “Ahh, fast food places”. Students provided collaboration for the information provided by other key informants. Students also refuted some of the claims made by others. For example, in *School One*: teachers, EA’s and the administrator indicated that bullying overweight children was not a problem in their school. However, students in *School One* made it clear they did not want to be overweight because it would result in teasing: “And also, a lot of times if you are obese you don’t have many friends

because people make fun of you for that”. Student usefulness for corroborating the opinions provided by other informants within the school has been evidenced in the literature (Smith, Gaffney, & Nairn, 2004).

Incorporating the student perspective offered understanding as to why some barriers or impacts are occurring. For example, when asked why students are throwing food in the garbage one student answered: “Because they don’t like it or if like they’re full they’re like oh, I can’t eat this anymore so they throw it out”. Furthermore, when asked why children do not eat nutritious foods the students suggested: “Like some unhealthy foods, some healthy foods don’t taste that great and then there’s like ice cream and cookies and they always have lots of flavor and they’re really good”, similar benefits of the student perspective have been reported in other studies (MacLellan et al., 2010). Students were not able to provide in-depth insight into the implementation of SNP. However, they did corroborate and exemplify some of the findings from other focus groups. In addition, they were able to provide an explanation for why some of the barriers are occurring.

Parents.

Parents’ insights were useful to this study. First, they verified opinions expressed by other key informants, for example, during interviews, the administrators admitted that some staff initially reacted negatively to SNP implementation. Likewise, some parents indicated that “...when the ahh, the policy first came in and my kids came home from school and said, ‘my teacher wasn’t very happy about being told what she could serve, so she gave us donuts today’”. Parents have not been widely included in SNP studies,

however, one study in PEI indicated that parent feedback supported the information provided by other informants (MacLellan et al., 2010).

However, in some cases the parents in the current study refuted the beliefs expressed by other key informants in the school. For instance, the teachers and administrators felt that the policy should not be too strict: “They were, they were just guidelines for people to, to try and you know, not abide by, but work towards”. Whereas, parents felt it should be stricter : “I think some of the things [SNP components] need to be a little tighter...” . This finding contradicts results reported in another Canadian study which indicated that several parents wanted a less strict SNP while a few were supportive of strict guidelines (Maclellan et al.)

In the current study, parents also expanded on concepts briefly introduced by other informant groups. Administrators had briefly stated that changes had been made to fundraising. However, since the PAC committee is often in charge of fundraising initiatives, they were able to provide more details about changes. In *School Two*, many informants alluded to the impact that the low SES of the community has on nutrition of students but, it was the parents who were able to provide a first person account of the situation. Similar results have not been reported in other studies.

Parents were able to provide information about how the SNP has extended beyond the school setting. Although, in this study parents were not very familiar with the SNP, parents did say their children had passed on what they had learned :“my daughter’s coming home saying to me mom that’s not healthy for you, mom you shouldn’t be doing this, mom... and, so she is. She’s picking up and she’s learning ...”. Other key

informants also demonstrated the usefulness of parents in providing insight into how the SNP is extending beyond the school. As this teacher illustrated:

Those children will go back home and they'll say, you know what mom we are not supposed to be eating...Umm this, this and this, umm for breakfast because it is too high in sugar and, and so on. I mean they will go back and, and tell their parents about that. And I've had parents come back to me...And say, oh so you are teaching nutrition and my child is telling me that umm they should be you know and...And and they appreciate it.

Custodians.

The duties of the custodian varied between schools. In two of three schools they were responsible for changing the garbage, so, in these schools was a useful source of information regarding food waste:

the kids would eat their candy and I would see sandwiches and apples and pears and all the stuff that you're really supposed to eat in the garbage...like a part eaten sandwich or one bite out of an apple, they were throwing out tonnes of food... but I don't see how, if the parents don't change, I don't see that changing.

An unexpected benefit of interviewing custodians was that they were very familiar with the school environment and were able to provide a 'fly on the wall' perspective. So, they corroborated or refuted the perceptions presented by food service operators, EA's, and administrators. However, custodians needed to be given encouragement during the interview because they did not feel they had anything insightful to contribute. No other SNP studies specifically indicated interviewing custodians.

Food Service Operators.

Food service operators (FSO), present in all three schools, provided useful information regarding changes to the canteens and cafeteria. Information provided by FSOs included changes to the menu, to student purchases and revenue. In the cafeteria, (which is operated by a food service company), the FSO provided particular insight into the struggle to balance revenue and nutrition. Furthermore, FSOs also contributed information regarding things they see happen in the lunch room thus, corroborating the EAs' accounts. Similar insights have been provided by FSO's in the literature (Nollen, 2007; Roberts, 2009).

Summary.

Administrators provided insight into the process of SNP implementation, teachers and EA's described implementation and impact within the classroom and EAs also provided an indication of SNP impact in the lunch room. The custodian and the EAs were most knowledgeable about food waste while the FSOs provided details regarding food sales. Parents provided an understanding of SNP impact beyond the school. Finally, students corroborated and demonstrated information provided by the other key informants. Hence, all key informants contributed useful information to this study. Incorporating multiple perspective contributed to an in-depth and holistic interpretation of the impact and implementation of SNP.

Study Limitations.

Some participants had not been involved with the school prior to SNP implementation so could not indicate what had changed as a result of SNP. Several staff members had recently transferred from other schools in the division so, although they could not provide details about SNP implementation in the current school they were able to indicate the difference in SNP enforcement between schools in the division. Each focus group did contain several participants who had been in the school prior to SNP implementation.

One of the most difficult aspects of this study was identifying parents willing to participate in the focus groups. Many parents indicated a lack of time as a reason for not participating in this study. Although parent participation was low, it served to corroborate one theme of the study; time constraints faced by parents.

Because this study took place in the school setting (a time and schedule oriented institution), interviews and focus groups had to be kept short due to time limitations. This was to be expected as most data collection occurred during the school day. This did not allow much time to build rapport prior to commencing the interviews but, for the majority of interviews and focus groups the informants answered all questions, addressed a variety of issues and had indicated they had nothing else to say. Other focus group studies in the school setting also acknowledged time limitations (Cargo et al., 2006).

School Two was a relatively small school in size and population with fewer than 200 students and a limited number of staff. This made it difficult to find the ideal number of participants (5 to 10) to form the teacher and EA focus groups. Therefore, the teacher

focus group ran with four participants and the EA's with three. It would be ideal to have used a larger school within the lower SES area, however, because of the specific criteria required for the schools (i.e., within one school division in the city of Winnipeg and the division must have an extensive policy) this limited the number of schools from which to choose. Although this school was small, it was a great example of a lower SES school within this division.

CHAPTER VI: CONCLUSION

A few themes were found to be common among all three schools. Several themes relate to the socioeconomic status of the community (e.g., food access, affordability, and prevalence of single-parent households) and the age group of students within the school (e.g., throwing food in the trash can, and role-modeling). This study revealed a marked difference in the environment and capacities of schools within this division. Since SNP implementation differed between schools within the same division it is likely that implementation varies across schools in Manitoba (especially considering the difference in geography and capacity between rural communities, remote and northern communities, Winnipeg and other urban centres). This supports the appropriateness of the enabling approach to SNP implementation utilized in Manitoba. The impact that the environment of the school and the community had on SNP implementation also supports the importance of considering the various spheres of influence when implementing, monitoring and evaluating the Manitoba SNP initiative.

What can be done?

This study identified barriers to SNP implementation that need to be addressed. It is important to recognise that some barriers to SNP cannot be easily eliminated. These are barriers that extend beyond the environment of the school (i.e., they reside within the community and society spheres). These barriers include accessibility and affordability of food, and proximity of fast food restaurants. Removing these obstacles extends beyond the scope of any SNP but the impact of these issues (as well as the other barriers identified in this study) on child nutrition can be addressed within the school setting

through various means including; nutrition curriculum, nourishment programs, and nutritious food sales and offerings.

To ensure that SNPs are being successfully implemented and having an impact, regular monitoring needs to occur. This study revealed that when the SNP was first implemented there was a large amount of time and effort spent communicating and implementing the SNP however, the level of effort has waned since initiation. Thus, consistent monitoring of SNP is needed to make sure that the initiative remains a current topic in the school and is continually reinforced.

Usefulness of the Qualitative Case Study Approach for Policy Evaluation

Examining multiple perspectives of SNP implementation helped to develop an in-depth and comprehensive understanding of how the SNP initiative has progressed. Including observations in the study further helped to create a holistic understanding of the school environment and served to corroborate or refute information gleaned from interviews and focus groups. Examining school documents (i.e., websites, policies, newsletters, and menus) provided insight into what had been happening prior to and after SNP (e.g., changes to canteen menus and fundraising). Therefore, other researchers wishing to gain a holistic understanding of SNP implementation or impact could benefit from using the case study approach.

Future Research

In relation to SNP style and structure, further research should be undertaken to determine the extent to which the nature of language (weak or strong) influences the likelihood and degree of schools implementing various procedures. Examining the impact of policy length and detail on level of SNP implementation and compliance may also be valuable. Research into the usefulness of and frequency to which tools provided by the Government of Manitoba (for creating and implementing SNPS) are being accessed is another area that requires attention.

As previously indicated, most parents in *School Two* relied on the canteen to provide some or all of their children's lunches. Hence, the canteen functioned as a missed opportunity to influence child nutrition. However, little is known about the number of children who rely on canteens in low SES schools in Manitoba. More research is needed to ascertain the degree of reliance in these communities. Research examining the quality of lunches in low SES schools in Manitoba that do not have canteens also requires more research. Another study could include qualitative interviews with managers of food service companies responsible for foods served in schools to identify barriers.

This qualitative case study identified barriers and enablers to SNP implementation that had not been previously reported in other SNP evaluations (e.g., peanut-butter ban, and negative reaction to the requirement of role-modeling). To determine whether other schools in the province have had similar experiences or have similar opinions, themes from this study could be used to form survey questions for other

Manitoba schools. Finally, this study examined schools within the city of Winnipeg. Further research could include a case study of rural or northern schools.

The Future of School Nutrition Policy in Manitoba

Results from this study are encouraging. Schools have started to see positive results stemming from SNP. To ensure that the impact of SNP continues to increase, schools, School Divisions and the Manitoba Government need to continue to provide support, resources and encouragement. Barriers identified in this study need be addressed in order to provide schools with the best opportunity for SNP success. The provincial government will continue to monitor SNP implementation to make sure that the initiative continues to progress.

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APPENDIX 7.0

Focus Group and Interview Attendance

School One	Number in Attendance
Administrator interview	1
FSO interview	1
Custodian interview	1
Parents focus group	9
Student focus group	8
Teacher focus group	7
EA focus group	4
School Two	
Administrator interview	1
FSO interview	1
Custodian interview	1
Parents focus group	2
Student focus group	6
Teacher focus group	4
EA focus group	3
School Three	
Administrator interview	1
FSO interview	1
Custodian interview	1
Parents focus group	2
Student focus group	9
Teacher focus group	6
EA focus group	10
Total	79

APPENDIX 7.1

Interview Questions: Administrator

Thank you for agreeing to take part in this interview. I am going to ask you a few questions related to the implementation and impact of school nutrition policy. I encourage you to answer in as much detail as possible as I believe that you have much useful information to contribute to this study. Your responses will be confidential. Do you have any questions before we start?

I am going to start with a few questions about how the school nutrition policy was implemented in your school.

1. How have you been involved with the implementation of school nutrition policy at your school?
2. What can you tell me about the implementation of school nutrition policy at your school?
Cues: **If not answered ask:**
 - Was there anything that made it easy for you to implement components of the policy? If so, what?
 - Was there anything that made it difficult to implement any component of the policy? If so, what?
3. Are there any aspects of the policy you have not been able to implement? Why?
Cues:
 - What were the barriers?

I am interested in your opinion about the policy, please remember that your responses will be confidential.

4. What do you think about the requirement of having a school nutrition policy?
Cues:
 - Is school nutrition policy important? Why?
5. What do you think about your divisions' school nutrition policy?
Cues:
 - Do you like the policy? Why?
6. Do you feel your opinion is generally shared? Why?
Cues:

- From parents, students, teachers
- Has the policy been met with acceptance or opposition? By whom?

Let's talk a bit about the impact that school nutrition policy has had in your school.

7. Can you tell me some changes that have occurred in your school that you would attribute to school nutrition policy implementation?

Cues:

- Have you noticed any changes in foods sold at school, or for fundraisers?

8. Are you aware of any changes in food or nutrition behaviors of students that you might attribute to school nutrition policy implementation? If so what?

Cues:

- Have teachers, students or parents indicated seeing any changes?

I also want to know, from your perspective, what improvements could be made to the policy.

9. What recommendations would you make to improve the policy implementation process in schools?

Cues:

- What types of supports are needed to improve policy implementation?

10. Is there anything that you would like to see added or removed from your divisions' school nutrition policy?

11. Is there anything else that you would like to say about the implementation of school nutrition policy in your school?

APPENDIX 7.2

Interview Questions: Food Service Operator

Thank you for agreeing to take part in this interview. I am interested in your perceptions regarding the implementation of nutrition policy at your school and how this policy has impacted your food service. Your responses are valuable to this study and will be kept confidential. Do you have any questions before we start?

1. Can you tell me a bit about your food service at this school?
Cues:
 - Who runs the service (school or private company)?
 - What are the hours of operation?

2. What can you tell me about the implementation of school nutrition policy at your school?
Cues:
 - Do you know about the policy?

3. Has the implementation of school nutrition policy made a difference to your food service?
Cues:
 - What changes have been made to the foods you sell?
 - Have prices changed as a result of policy implementation?
 - Have portion sizes changed as a result of policy implementation?

4. What do you like or dislike about the policy?

5. Is there anything else that you would like to say about the implementation of school nutrition policy in your school?

APPENDIX 7.3

Interview Questions: Custodian

Thank you for agreeing to take part in this interview. I am interested in your perceptions regarding the implementation of nutrition policy at your school and how this policy has impacted your duties as a custodian. Your responses are valuable to this study and will be kept confidential. Do you have any questions before we start?

1. Can you tell me a bit about your daily routine in the school?
2. What can you tell me about the implementation of school nutrition policy at your school?
Cues:
 - Have you been informed about the policy? (if yes, by whom?)
3. Have you noticed a change in the foods that are being sold in the school?
Cues:
 - Has the number of vending machines changed?
 - Has the food sold in vending machines changed?
4. Have you noticed any different food or nutrition behaviors with students? If so what?
Cues:
 - Are children eating/ purchasing different foods
 - Has the amount of food waste changed? How?
 - Has there been a change in where children eat lunch?
 - Have you noticed any change in the length of time it takes children to eat lunch?
5. Is there anything else that you would like to say about the implementation of school nutrition policy in your school?

APPENDIX 7.4

Focus Group Questions: Parents

[Introduce focus group facilitators] Thank you for agreeing to participate in this discussion. Have any of you participated in a focus group discussion before? For those of you who haven't I just want to explain the process before we start. Please feel free to respond to each others' statements as you would in conversation. However, as this is being recorded it is important that we take turns speaking and that we talk in loud, clear and slow voices. This is a safe environment and everybody's opinions are important and valuable and please remember there is no right or wrong answer so I encourage you to be as honest as possible. Also, I ask you to respect each other's opinions and please remember that everything said in this group is confidential. Does anybody have any questions before we start?

1. Can we start by going around the table and having each of you tell me about your child(ren) in the school (grade, how many years have they been attending)?
2. I want to start by talking about healthy eating in schools, what sorts of things do you see or hear happening in this school surrounding healthy eating?

A few years ago this school division created a nutrition policy which is followed by all schools in the division.

3. What can you tell me about the School nutrition policy at your child's school?
Cues:
 - Are you aware of the policy?
 - How do you know about the policy?
 - Have you seen the policy?
 - Do you know where to find the policy?
 - Have you been involved with policy implementation in any way?
4. *(If Familiar with policy ask this question, otherwise move to # 5)* What is your opinion about the policy?
Cues:
 - Do you think that the changes that have been made will make a difference to the health of your child (ren)?

5. Have you noticed any different food or nutrition behaviours with your child(ren)?

I'm interested in knowing, as parents, what you think an SNP should look like.

6. What would you like to see included in a school nutrition policy?

Cues:

- What kind of support would be helpful?
(nutrition information, services of a dietitian, training for foodservice).
6. Is there anything else that you would like to say about the implementation of school nutrition policy in your school?

APPENDIX 7.5

Focus Group Questions: Students

[Introduce focus group facilitators] Thank you for agreeing to participate in this discussion. Have any of you participated in a focus group discussion before? For those of you who haven't I just want to explain the process before we start. Please feel free to respond to each others' statements as you would in conversation. However, as this is being recorded it is important that we take turns speaking and that we talk in loud, clear and slow voices. This is a safe environment and everybody's opinions are important and valuable and please remember there is no right or wrong answer so I encourage you to be as honest as possible. Also, I ask you to respect each other's opinions and please remember that everything said in this group is confidential. Does anybody have any questions before we start?

1. I want to start by talking about healthy eating. Why do you think that healthy eating is important?
2. What types of things do you see happening in this school that might encourage you to eat healthy?
3. What can you tell me about the School nutrition policy (*if not familiar with term 'policy use 'guidelines' instead*) at your school?

Cues:

- Did you know that your school has a set of guidelines?
- How do you know about them?
- Have you seen them?
- Do you know where to find them?

1. Why do you think your school has a school nutrition policy?
2. Do you think it is a good idea to have a school nutrition policy?
3. (*only ask if familiar with policy*)What do you like about the policy?
4. (*only ask if familiar with policy*)What do you not like about the policy?
5. Has the use of this policy in your school made any difference to you?

Cues:

- Do you eat any differently?
- Has it made a difference to the food you purchase at school?

6. Has the policy made any difference to the foods you eat outside of school?

Cues:

- Has the food you eat at home changed?
- Are you or your parents purchasing different food then before?

7. Is there anything else that you would like to say about the implementation of school nutrition policy in your school?

APPENDIX 7.6

Focus Group Questions: Teachers and EA's

[Introduce focus group facilitators] Thank you for agreeing to participate in this discussion. Have any of you participated in a focus group discussion before? For those of you who haven't I just want to explain the process before we start. Please feel free to respond to each others' statements as you would in conversation. However, as this is being recorded it is important that we take turns speaking and that we talk in loud, clear and slow voices. This is a safe environment and everybody's opinions are important and valuable and please remember there is no right or wrong answer so I encourage you to be as honest as possible. Also, I ask you to respect each other's opinions and please remember that everything said in this group is confidential. Does anybody have any questions before we start?

1. Can you start by telling me the grade you teach and how long you have been working at this school?

I just want to start by talking about the school nutrition policy at your school.

2. What can you tell me about the school nutrition policy at your school?

Cues:

- Are you aware of the policy?
- How do you know about the policy?
- Have you seen the policy?
- Do you know where to find the policy?

3. What do you think about the requirement of having a school nutrition policy?

Cues:

- Is school nutrition policy important? Why?

Now I want to talk about the process of policy implementation at your school.

4. Have you been involved with the implementation of school nutrition policy at your school?

Cue:

- Have you had to make changes to school curriculum?
- Have you made changes to the foods allowed in your classroom?

I'm also interested in your opinion about the policy.

5. Do you feel that implementation of school nutrition policy has made a difference in your school?

Cues:

- Do you think the changes that have been made will make a difference to the health of children in your school? Why or why not?

6. Have you noticed any different food or nutrition behaviors with students? If so what?

Cues:

- Have children's lunches changed? How?
- Have children's nutrition behaviours in class changed? How?
- Have children's nutrition behaviours outside of class changed?

7. I am also interested in whether school nutrition policy can affect non-nutritional behaviors' of children. Have you noticed any other behaviour changes that you might attribute to the implementation of school nutrition policy?

Cues:

- Has attendance changed?
- Have child academic performance changed?
- Have you noticed changes in child attentiveness?

8. From your point of view, is there anything that has not been implemented as part of the policy that you would like to see?

Cues:

- What changes would make the policy easier to implement?
- What types of support need to be offered

Cues: nutrition information, services of a dietitian.

9. Is there anything else that you would like to say about the implementation of school nutrition policy in your school?



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Informed Consent (adult)

Title: Assessing Key Informants' Perceptions of the Impact of School Nutrition Policy Using a Case Study Approach.

Researcher: Jessica Rutherford, BSc., Master's Student, University of Manitoba

This consent form, a copy of which will be left with you for your records and reference, is only a part of the process of informed consent. It should give you the basic idea of what the research is about and what your participation will involve. If you would like more detail about something mentioned here, or information not included here, you should feel free to ask. Please take the time to read this carefully and to understand any accompanying information.

What is the purpose of this study? Many children in Manitoba suffer from poor nutrition. To help address this issue school nutrition policies have been implemented in each school division in Manitoba. The purpose of this study is to gain an understanding of how nutrition policy is perceived by students, administrators, parents, teachers, and staff. By participating in this research you will have an opportunity to voice your opinion about school nutrition policy. The information collected from this research will be used to further direct the school nutrition policy initiative.

How can I be involved? If you are a parent, teacher, or lunch time supervisor you will be asked to attend a 30 to 60 minute focus group with other parents, teachers or lunch time supervisors. If you are an administrator, nutrition program facilitator, custodian or a member of the food service staff you will be asked to participate in a 30 to 45 minute interview with the researcher.

Is there any risk with my participation in this research? No, taking part in an interview or focus group poses no risk beyond that which you would normally encounter in a conversation during your everyday life.

Will the interview be recorded? Yes, the interview will be recorded with a digital audio recorder. The interview will be typed up to record in writing your ideas and experiences. However, you will be given a fictitious name in the transcript. Your experiences will be combined with the experiences of other interview/focus group participants to look for common themes, suggestions and ideas.

Will my answers be kept confidential? Yes, your name will be removed and you will be identified by a fictitious name that will be used in the transcripts and final report. All information collected will be stored in locked drawers or on secure files on the computer of the researcher. When results of the research are shared with others, no information will be included which would identify you or any other individual participant.

Will I receive any feedback about the results of this researcher? Yes, at the end of the study the researcher will be conducting a presentation of findings within the school. All participants are invited to attend. Notice will be given prior to the presentation.

Your signature on this form indicates that you have understood to your satisfaction the information regarding participation in the research project and agree to participate as a subject. In no way does this waive your legal rights nor release the researcher, or involved institutions from their legal and professional responsibilities. You are free to withdraw from the study at any time, and /or refrain from answering any questions you prefer to omit, without prejudice or consequence. Your continued participation should be as informed as your initial consent, so you should feel free to ask for clarification or new information throughout your participation.

Principal Researcher:

Jessica Rutherford, BSc., Master's Student, Human Nutritional Sciences, University of Manitoba

Phone:

e-mail:

Supervisor:

Dr. Paul Fieldhouse, PhD.

This research has been approved by the University of Manitoba, Fort Garry Campus Joint-Faculty Research Ethics Board. If you have any concerns or complaints about this project you may contact any of the above-named persons or the Human Ethics Secretariat, Margaret Bowman at 474-7122, or e-mail margaret_bowman@umanitoba.ca. A copy of this consent form has been given to you to keep for your records and reference.

I consent to participate in this research.

Name of Participant (please print)

Participant's Signature Date

Researcher's Signature Date





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Informed Consent (Children)

Title: Assessing Key Informants' Perceptions of the Impact of School Nutrition Policy Using a Case Study Approach.

Researcher: Jessica Rutherford, BSc., Master's Student, University of Manitoba

This consent form, a copy of which will be left with you for your records and reference, is only a part of the process of informed consent. It should give you the basic idea of what the research is about and what your child's participation will involve. If you would like more detail about something mentioned here, or information not included here, you should feel free to ask. Please take the time to read this carefully and to understand any accompanying information.

What is the purpose of this study? Many children in Manitoba suffer from poor nutrition. To help address this issue, school nutrition policies have been implemented in each school division in Manitoba. The purpose of this study is to gain an understanding of how nutrition policy is perceived by students, administrators, parents, teachers, and staff. By participating in this research your child will have an opportunity to voice his or her opinion about school nutrition policy. The information collected from this research will be used to further direct the school nutrition policy initiative.

How can my child be involved? Your child will be asked to participate in a 30 to 60 minute focus group with other students in the school.

Is there any risk with my child's participation in this research? No, taking part in a focus group poses no risk beyond that which you would normally encounter in a conversation during everyday life.

Will the interview be recorded? Yes, the interview will be recorded with a digital audio recorder. The interview will be typed up to record in writing your child's ideas and experiences. However, your child will be given a fictitious name in the transcript. His or her experiences will be combined with the experiences of other focus group participants to look for common themes, suggestions and ideas.

Will my child's answers be kept confidential? Yes, his or her name will be removed and he or she will be identified by a fictitious name that will be used in the transcripts and final report. All information collected will be stored in locked drawers or on secure files on the computer of the researcher. When results of the research are shared with others, no information will be included which would identify your child or any other individual participant.

Will I receive any feedback about the results of this researcher? Yes, at the end of the study the researcher will be conducting a presentation of findings within the school. All participants and parents are invited to attend. Notice will be given prior to the presentation.

Your signature on this form indicates that you have understood to your satisfaction the information regarding participation in the research project and agree to allow your child to participate as a subject. In no way does this waive your legal rights nor release the researcher, or involved institutions from their legal and professional responsibilities. Your child is free to withdraw from the study at any time, and /or refrain from answering any questions he or she prefers to omit, without prejudice or consequence. Your child's continued participation should be as informed as your initial consent, so you and your child should feel free to ask for clarification or new information throughout your child's participation.

Principal Researcher:

Jessica Rutherford, BSc., Master's Student, Human Nutritional Sciences, University of Manitoba

Phone: (

e-mail:

Supervisor:

Paul Fieldhouse, PhD

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I consent to allow my child to participate in this research.

Name of Participant (Please print)

Name of Parent or Guardian of Participant (Please print)

Signature of Parent or Guardian of Participant **Date**

Researcher's Signature **Date**





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Assent Form (Child)

Title: Assessing Key Informants' Perceptions of the Impact of School Nutrition Policy Using a Case Study Approach.

Researcher: Jessica Rutherford, BSc., Master's Student, University of Manitoba

This assent form, a copy of which will be left with you for your records and reference, is only a part of the process of informed consent. It should give you the basic idea of what the research is about and what your participation will involve. If you would like more detail about something mentioned here, or information not included here, you should feel free to ask. Please take the time to read this carefully and to understand any accompanying information.

What is the purpose of this study? Many children in Manitoba suffer from poor nutrition. To help address this issue school nutrition policies have been implemented in each school division in Manitoba. The purpose of this study is to gain an understanding of how nutrition policy is perceived by students, administrators, parents, teachers, and staff. By participating in this research you will have an opportunity to voice your opinion about school nutrition policy. The information collected from this research will be used to further direct the school nutrition policy initiative.

How can I be involved? You will be asked to participate in a 30 to 60 minute focus group with other students in the school.

Is there any risk with my participation in this research? No, taking part in an interview or focus group poses no risk beyond that which you would normally encounter in a conversation during your everyday life.

Will the interview be recorded? Yes, the interview will be recorded with a digital audio recorder. The interview will be typed up to record in writing your ideas and experiences. However, you will be given a fictitious name in the transcript. Your experiences will be combined with the experiences of other interview/focus group participants to look for common themes, suggestions and ideas.

Will my answers be kept confidential? Yes, your name will be removed and you will be identified by a fictitious name that will be used in the transcripts and final report. All information collected will be stored in locked drawers or on secure files on the computer of the researcher. When results of the research are shared with others, no information will be included which would identify you or any other individual participant.

Will I receive any feedback about the results of this researcher? Yes, at the end of the study the researcher will be conducting a presentation of findings within the school. All participants are invited to attend. Notice will be given prior to the presentation.

Your signature on this form indicates that you have understood to your satisfaction the information regarding participation in the research project and agree to participate as a subject. In no way does this waive your legal rights nor release the researcher, or involved institutions from their legal and professional responsibilities. You are free to withdraw from the study at any time, and /or refrain from answering any questions you prefer to omit, without prejudice or consequence. Your continued participation should be as informed as your initial consent, so you should feel free to ask for clarification or new information throughout your participation.

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I assent to participate in this research. Please note that students willing to participate can do so only with parental consent.

Name of Participant (please print)

Participant's Signature Date

Researcher's Signature Date





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Oath of Confidentiality

I, _____ affirm that I will not

disclose or make known any matter related to the participants that comes to my

Knowledge during this research project.

Signature of Transcriptionist

Date

Signature of Witness

Date



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I, _____ affirm that I will not

disclose or make known any matter related to the participants that comes to my

Knowledge during this research project.

Signature of participant

Date

Signature of Witness

Date