Enabling and Barrier Factors in the Development of Elementary and Consolidated School

Nutrition Policies on Prince Edward Island

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My participation in this project has been an experience of personal growth in developing a

greater appreciation of the school world. Courses that I took with my fellow graduate students

who were school teachers and principals introduced me to some of the complexities of school life

that far exceeded my superficial understanding of the role of teachers and principals. Principals

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Healthy Eating Policy Working Group welcomed me into their discussions and offered truly

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Abstract

Schools have been identified as promising environments through which to reach large numbers of children and positively influence their health behaviors through nutrition policies. Despite emerging evidence that school nutrition policies are beneficial to the health of children, many schools do not have formal policies. To identify the enabling and barrier factors in the development of nutrition policies in PEI elementary and consolidated schools a document review and a series of interviews were conducted with members of a School Healthy Eating Policy Working Group, principals and teachers who were most involved in developing the policies.

Several key groups and actions enabled the development of nutrition policies. The policy working group members created an understanding between the school world and the nutrition world and drew upon common philosophical ground in order to work together to champion and lead the change process. The principal was identified as an important champion for change at the school level particularly when they were able to develop a critical mass of interest for change. Navigating the change process during policy development required: building a case for change, testing policies in a real world setting, integrating healthy eating within school life, offering support to schools, engaging participants in the process to reduce the uncertainty of the change and acknowledging the need to weigh the cost and benefit of the proposed change. External pressures on schools and available foods varied in the extent to which they at times enabled or challenged policy development. Finally, resource limitations, competing issues and the use of unhealthy food as a reward were identified as the primary barriers in the development of school nutrition policies.

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Chapter 1

Introduction to the Study

1.0 Background

Children's eating habits are influenced through a complex interplay between numerous factors including: food availability and marketing; activity levels, individual, family, social, cultural factors and environmental influences (Dietz & Gortmaker, 2001; Taylor, Evers & McKenna, 2005). Survey data suggest that children's eating habits have changed over time as reflected by changing meal patterns (such as declining breakfast consumption) and routine intake of higher calorie foods such as french fries and soft drinks (Lytle, Seifert, Greenstein & McGovern, 2000). Some children also face health concerns related to insufficient nutrient intakes (Stang & Bayerl, 2003). Schools have been identified as environments in which to undertake action to improve the nutritional health of children due to the high percentage of the population of children that can be reached, time spent at school, meals and snacks served, potential links to curriculum and the influence of social aspects of school life on nutrition behaviors (Dietz & Gortmaker, 2001; French, Story, Fulkerson & Gerlach, 2003; Kubik, Lytle, Hannan, Perry & Story, 2003; Lobstein, Baur & Uauy, 2004; Wechsler, Brener, Kuester & Miller, 2001; WHO, 1998). School nutrition policies, that address issues such as access to safe and healthy foods at school, time to eat, and the integration of nutrition education within the curriculum, can be an important strategy to create supportive environments that promote healthy eating (Schmid, Pratt

& Howze, 1995).

On Prince Edward Island (PEI), the development of school nutrition policies began in 2003 when the Healthy Eating Alliance, a group of teachers, health professionals, academics, health charity representatives and government personnel commissioned a subcommittee - the School Healthy Eating Policy Working Group to begin the process. This working group's membership consisted of: a Project Coordinator; a University of Prince Edward Island (UPEI) professor; Eastern, Western and French School Board representatives; a Home and School Association member and provincial government representatives. In the fall of 2003, this group, in cooperation with administrators of the school districts, identified sixteen 'lead elementary schools' interested in developing school nutrition policies. To facilitate policy development at the school level, nutrition teams, consisting of three to four individuals, met in November, 2003, with the School Healthy Eating Policy Working Group. Throughout the remainder of the policy development process the lead schools and the policy working group continued to interact to review, refine and problem solve emerging issues related to the development of the nutrition policies which would ultimately be implemented in all Island elementary and consolidated schools in 2006.

1.1 Research Question

Though survey instruments have measured the school nutrition environment in various jurisdictions, little has been documented regarding the factors that initially enabled or acted as barriers in the development of school nutrition policies (McCormack Brown, Akintobi, Pitt, Berends, McDermott, Agron & Purcell, 2004). The purpose of this study was therefore to examine the process of developing school nutrition policies in elementary and consolidated

schools on PEI to identify enabling and barriers to the development of these policies from the perspective of those individuals most engaged in the process.

1.2 Significance of the Study

Through enhancing our understanding of the nature and complexity of factors that enable and stand as barriers to the development of school nutrition policies, the results presented will contribute to the growing body of literature on school health issues related to nutrition. Those in other jurisdictions who plan to initiate school nutrition policy development processes may benefit from the insights and experiences shared by participants in this study. The perspectives described represent those of a range participants including: principals, teachers, researcher, administrators, and provincial government representatives thereby extending the understanding this process beyond the perspectives of any single participant group.

1.3 Personal Background

In beginning this inquiry, I felt that the selection of a qualitative research focus required reflection on my professional and personal interests to clarify my position as a researcher. As an undergraduate student, I was trained as a dietitian in quantitative methods, including: body measurements, calculations and formulas which were designed to produce knowledge within the boundaries of one facet of scientific 'reality'. Coupled with this quantitative training was the development of interviewing skills to be exercised on 'patients' to assess their nutritional status based on analysis of dietary recall information. These methods of interviewing were acknowledged to be valuable but imperfect. The interviewer was an instrument, but this process was intricately linked with scientific methods that were viewed as more objective and therefore valid.

After completing my training, real world experiences began to teach me that 'patients' were actually individuals, scientific measurements were not infallible, and that some of the scientific 'facts' that I had accepted without question were not necessarily irrefutable certainties of nature but rather one piece of the rapidly changing science of nutrition. I was introduced to other ways of working with clients where the professional and the 'patient' worked in partnership to create care plans to address health issues that were identified collaboratively. This style of practice brought the individual into sharp focus - their lived experiences, viewpoints and their lifestyle. Individual client priorities were not only heard but became central to understanding any possible partnership between health care provider and 'other'. This type of care was individualized and alterable, based on the realities of the individual's life and centered on their identified values and priorities.

As a member of the Healthy Eating Alliance and an employee of the Department of Health, the option to study the development of school nutrition policies arose as an opportunity to fulfill the mandate of both organizations. The choice of topic covered multiple interests: I was seeking a research topic, the Healthy Eating Alliance wished to develop a research strategy to evaluate its efforts and funders at the Department of Health wished to evaluate their financial investments and identify lessons learned through sponsored activities. As a dietitian I was aware of growing interest in the increasing rates of obesity in children and in schools as an environment of interest from which to launch population health efforts to improve the health of children.

Upon entering the field I held certain beliefs and theories related to the topic. I suspected that influencing the health habits of children as early as possible would have potentially beneficial effects on their long term health. From an intuitive standpoint this made sense, but I

also suspected that the relationship was not a simple one, as the influence of parents, peers, life events and determinants of health would also play important roles in overall health. I believed that schools had the potential to be an environment of positive influence on the development of a child's health habits but I was uncertain as to the capacity of schools to assume this role. I suspected that I would gain a greater understanding of principals' and teachers' opinions on the capacity of schools to be involved in school change efforts through the interview process.

As Sarason (1990) queried "how well do you understand the culture of the context in which the problem arose and in which you seek to intervene?"(p.130). As a non-Islander, I hoped to reveal unique beliefs and attitudes that could enable or act as barriers to school nutrition policy development on PEI. I had little insight into the priorities of the Prince Edward Island (PEI) school system (having attended school in New Brunswick, not having children in the PEI school system nor having routine contact with elementary school children locally) therefore I did not hold any assumptions that health related topics or behaviors were a priority for Island schools. I had only a peripheral awareness of some issues related to the school system through news stories that I had heard on: potential school closures due to funding concerns, poor test scores of students, low school completion rates, and overall poor literacy levels. As a student in the Faculty of Education at UPEI, I had witnessed heated debates on the various school related issues and as the research study progressed I began to gain a wider perspective of some issues relevant to Island schools.

As I positioned myself within the constructivist paradigm in approaching this work, I considered each school setting where the work of policy development had been initiated to be a unique entity. The progress or regress of policy development was the result of the individual and

collective actions of those most directly involved in the process. These individuals held unique views of the world and personally constructed realities that shaped and explained their actions and interactions with others during this process. It was through the exploration of how these beliefs, attitudes and actions influenced the process of school nutrition policy development that this process was described.

1.4 Definition of terms

Several terms are used throughout the course of this thesis, therefore the following definitions are included for clarity:

- school nutrition policies - have been described by McKenna (2003) as providing a "...framework for coordinating all aspects of school nutrition, including nutrition education, food services, meal programs and facilities" (p. 208). The intent and goals of school nutrition policies are specifically described within each policy but generally these policies focus on achieving good nutrition to support the health of children. Similarly, the specific elements contained within school nutrition policies reflect the context and priority issues of the jurisdiction in which they were developed. Some common issues addressed in school nutrition policies as described by Briggs, Safaii & Beall (2003) include: food and beverages sold at schools (quality and food safety); implementing comprehensive nutrition education; sufficient time for meals and snacks and promoting a healthy school environment. The development of school nutrition policies may potentially be initiated at several levels, including the provincial (Department of Education) level when policies are being developed which will apply to all provincial schools; within a school district to address an issue of particular interest to schools within the district or at

an individual school level to articulate the intended direction of a school related to the school nutrition environment. In the case of this policy development process, the School Healthy Eating Policy Working Group collaborated with schools within their respective districts to develop draft policy language for consideration by the school board.

- health sectors - dependent on the context, a range of health professionals and organizations may be engaged in activities to improve the health of children, including but not limited to: provincial government departments, public health units, primary health care or community health centers, dietitians, nurses, physical activity professionals, family physicians, pediatricians and others.

- determinants of health - have been defined by Edwards (2004) as a range of factors that have a direct effect on the health of individuals and the general population. Determinants of health include: income levels, employment, education, food security, housing, social inclusion and other factors.

- consolidated schools - Prince Edward Island has a variety of schools including elementary schools (for students in grades one to six), intermediate schools (for students in grades seven to nine) and high schools (for students in grades ten to twelve). Consolidated schools are those which include alternate configurations of grade levels to those described previously. On Prince Edward Island, the majority of consolidated schools include students in grades one to eight.

In the chapters that follow, the research study and findings will be described in further detail. In the next chapter, relevant literature on children's health and eating habits will be reviewed to explain some of the driving forces behind efforts to improve children's nutritional

health, followed by an exploration of change in schools. Chapter three will describe the study methods and procedures used in data analysis. In chapter four, the results of the participant interviews and the document review will be presented, including enabling and barrier factors in school nutrition policy development. The role of pressure and the availability of food in school will also be examined as factors being potentially enabling or barriers to the development of school nutrition policies. In the final chapter the implications of the findings and the potential for future research will be summarized.

Chapter 2

Review of Relevant Literature

2.0 Introduction

A review of the literature that informs the development of school nutrition policies

requires drawing together evidence from the fields of nutrition and education. This review will

begin by focusing on the health of children including: emerging trends in children's weight,

under-nutrition and the implications of these states. Evidence on the eating habits of school aged

children and the broad context of influences on children's eating habits will be presented with a

focus on the role of schools as favorable environments for developing policies that support good

nutritional health. Finally, literature which examines the challenges inherent in initiating changes

processes in schools will be reviewed. Where possible, this literature review will focus on

evidence specific to the health of elementary school children who were the intended beneficiaries

of this policy development process.

2.1 Trends in Children's Health

To understand why attention has turned towards schools to improve the health of children

it is important to examine some of the emerging trends in children's health and their eating

habits. The major trends of interest include: increasing rates of overweight and obesity, under-

nutrition and the health risks associated with these states.

Available data suggest that the prevalence of overweight and obesity in children has

increased globally. Dehghan, Akhtar-Danesh and Merchant (2005) noted that, while the highest

rates of childhood obesity have been reported in developed countries, developing countries are

not exempt from this trend. The prevalence rates of overweight and obesity vary across countries

from Saudia Arabia where "...one in every six children aged 6 to 18 years old is obese" (Dehghan et al., 2005, p.25) to continental Africa where the prevalence of overweight children is below 10% (Lobstein et al., 2004). In the United States a trend towards increasing weight in children has also been noted, most significantly in the period from 1988-1994 when the prevalence of obesity doubled in individuals aged 6-19 years in the National Health and Nutrition Examination Survey (NHANES) (Dehghan et al., 2005). Results from the most recent NHANES survey (1999-2002), which included measured heights and weights, revealed a combined overweight and obesity rate of 27% in survey participants aged 2-17 years (Shields, 2005).

In Canada, the availability of routine physical measurement data (height and weight) from population surveys of children has been limited. Tremblay, Katzmarzyk and Willms (2002) used a combination of physical measurements and parent reported information from three surveys conducted between 1981 to 1996 to describe trends in overweight and obesity in children aged 7-13 years. This analysis suggested an increase in overweight of 11% to 33% in boys and 13% to 27% in girls during the period from 1981-1996 (Tremblay et al., 2002). The calculated changes in the prevalence of obesity in the population also increased "...from 2 to 10% in boys and from 2 to 9% in girls..." (Tremblay et al., 2002, p.539). Measured height and weight data became available when the 2004 Canadian Community Health Survey 2.2 was conducted. Shields (2005) reported that "...26% of Canadian children and adolescents aged 2 to 17 were overweight or obese; 8% were obese" (p.2). In this survey, the combined rate of overweight and obesity for children in the Atlantic provinces was above the national average with prevalence rates of "...Newfoundland and Labrador (36%), New Brunswick (34%) and Nova Scotia (32%)" (Shields, 2005, p. 3). These results aligned with Veugelers and Fitzgerald's (2005) survey of

Nova Scotia grade five students which found rates of overweight of 32.9% and rates of obesity of

9.9%. While Prince Edward Island rates of 30% childhood overweight and obesity are lower

than those of other Atlantic provinces, these rates remain above the Canadian average (Shields,

2005).

The concept of overweight and obesity in childhood 'tracking' or persisting into

adulthood has also been studied by those who are interested in treating overweight at its earliest

presentation. In their review of the literature, Serdula et al. (1993) described a predictive

association between childhood obesity and subsequent obesity in adulthood. Upon review of

epidemiological data, this relationship appeared to strengthen as the child became older such that

in "...obese preschool children 26 to 41% were found to be obese as adults, and among obese

school-age children, 42 to 63% were obese as adults" (Serdula et al., 1993, p.174). In an

analysis of multiple NHANES surveys, the risk of being overweight for children aged 8 to 18

years who were at the 75th percentile of weight for height was double that of children with

measurements in the 50th percentile (Guo & Chumlea, 1999). This persistence of overweight

from childhood into adulthood may indicate that earlier interventions, such as nutrition policies

in schools, are required to affect the prevalence of chronic diseases associated with excess weight

in adulthood.

The rising prevalence of overweight and obesity in Canadian children is cause for concern

on several levels including: the potential impact on the immediate and long term health of

children, self esteem and economic costs of increased levels chronic diseases such as diabetes,

heart disease and cancer. Dietz (1998) identified that the more common short term consequences

of childhood obesity were related to psychosocial issues. Self esteem was a specific aspect of

psychological health that may be affected by obesity. The association between obesity, lower self esteem and increased initiation of high risk behaviors, such as tobacco use, may warrant additional attention to obesity as an influence on self esteem (Strauss, 2000).

In a society where increasingly thin body types are portrayed as ideal through a variety of media forms, it is virtually impossible for even the youngest citizens to avoid being influenced by overt and covert messages that discriminate against those who do not represent the 'ideal'. Children between the ages of 6 to 11 years have drawn associations between overweight and laziness and have demonstrated a preference for other children with a variety of physical handicaps above children who are overweight (Dietz, 1998; Lobstein, Baur & Uauy, 2004). Furthermore, children's body size may also affect their routine interactions with adults, particularly if an overweight child is mistaken for being older than their chronological age and confronted with unrealistic behavioral expectations (Dietz, 1998). Finally, preoccupation with food, development of disordered eating and unhealthy weight control efforts are additional risks for overweight children who have a body shape that is at odds with a socially constructed standard (Dietz, 1998).

Overweight and obesity may have other health consequences for children such as: sleep apnea, changes in bone structure (bowing of leg bones), high blood pressure, fatty liver, high blood fat levels, glucose intolerance, and early development of type 2 diabetes (Dietz, 1998; Krebs et al., 2003; Lobstein et al., 2004). Though chronic diseases, such as diabetes and heart disease, have been more often associated with adult obesity in the past, the increasing prevalence of overweight children has led the American Association of Pediatrics to urge pediatricians to "...recognize and monitor changes in obesity associated risk factors for adult chronic disease..."

(Krebs et al., 2003, p. 427).

Imbalances in glucose homeostasis, including impaired glucose intolerance and type 2 diabetes are increasing in prevalence in a manner that mirrors increasing rates of obesity in the population. Although Canadian data are limited, the Canadian Diabetes Association Clinical Practice Guidelines Expert Committee (2003) reported that surveillance data from the United States reflected a "....10 to 30-fold increase in the number of children with type 2 diabetes over the past 10 to 15 years" (p. S91). The International Diabetes Federation described the potential impact of early onset of type 2 diabetes as:

> onset of diabetes in childhood or adolescence heralds many years of disease and an increased risk that the full range of both micro- and macrovascular complications will occur when affected individuals are still relatively young. Thus, future generations many be burdened with morbidity and mortality at the height of their productivity, potentially affecting the workforce and health care systems of countries across the world (Alberti et al., 2004, p. 1799)

Persistent high blood pressure and high levels of blood fat increase the risk for development of cardiovascular disease and, as with type 2 diabetes, earlier development of these conditions may negatively affect a child's long term health (Krebs et al., 2003). One longitudinal study on this subject, the Bogalusa Heart Study, was conducted between 1973 and 1994 in Louisiana. In this study, 9167 children (mean age 11.9 years) were repeatedly assessed on height and weight measurements, blood fat levels, blood pressure and insulin levels (Freedman, Dietz, Srinivasan & Berenson, 1999). Freedman et al. (1999) reported that 80% of the 5 to 10 year old children who had three or more risk factors for cardiovascular disease (high blood fats -

cholesterol, high low density lipoproteins, high blood pressure, or high insulin levels) were

overweight. These findings were particularly alarming as "...the longitudinal relationship of

childhood obesity to fibrous plaques and coronary artery calcification indicates that the

development of [coronary heart disease] may depend on the cumulative lifetime effects of

obesity" (Freedman, Khan, Dietz, Srivasan & Berenson, 2001, p. 715).

In another report documenting chronic conditions associated with childhood obesity,

symptoms of sleep apnea, which has been associated with pulmonary embolism and sudden

death, were reported in one third of children who were >150% of ideal body weight (Dietz, 1998;

Lobstein et al., 2004). Fatty liver disease, which encompasses a range of clinical conditions, has

also been identified as a potentially serious health concern for children. Lobstein and colleagues

(2004) reported that "...current prevalence estimates indicate that [non-alcoholic liver disease]

affects approximately 3% of all children in various countries and from 23% to 53% of children

who are obese.." (p. 24).

Overweight and obesity are also associated with direct and indirect costs to society.

Direct costs include: medical care, medications, and services required to treat children who

develop chronic medical conditions associated with overweight (Lobstein et al., 2004). In the

United States, Wang and Dietz (2002) used National Hospital Discharge Survey data from 1979-

1999 to describe an estimated increase in annual hospital costs from $12.6 million US (1979-

1981) to $110 million US (1997-1999) for obese children aged 6 to 17 years. After adjustment

for inflation, the authors reported that annual hospital costs had increased during this period more

than threefold due in part to extended hospital stays, increased admission rates for obesity (197%

increase) and obesity related chronic conditions such as sleep apnea (436% increase) (Wang &

Dietz, 2002). These costs, though significant, may underestimate the direct costs of overweight in children as the data for analysis are available only when overweight or obesity are listed as discharge codes in hospital records (Lobstein et al., 2004; Wang & Dietz, 2002).

Indirect costs to society are more challenging to describe in relation to childhood overweight and obesity. Indirect costs of overweight and obesity due to reduced economic productivity, short and long term disability and illness may be more relevant to adolescents who are a part of the workforce (Lobstein et al., 2004). Finally, the indirect costs of overweight and obesity on an individual level related to reduced quality of life, societal prospects or limitations for future employment remain important yet challenging to quantify in the lives of children (Lobstein et al., 2004).

Children who do not have access to sufficient food for optimal growth and development represent another important area of interest in children's health that may be addressed within schools through feeding programs. Stang and Bayerl (2003) stated that children with poor nutritional intakes "...are at risk for a variety of poor outcomes including growth retardation, iron deficiency anemia, poor academic performance, development of psychosocial difficulties, and an increased likelihood of developing chronic diseases..." (p. 887). Access to sufficient quantities of quality food may be mediated by many factors such as: time pressures within the family, personal preferences of the child and by food insecurity within the household. According to Statistics Canada (2001), of all age groups ".... children aged 0 to 17 years were those most likely to live in a food insecure household". In an effort to further describe those most at risk, food security agencies have undertaken surveys of food bank use. In one such survey of Canadian food banks, Tsering (2005) reported that 40.7% of clients who used food banks were children. Prince Edward

Island food banks reported a 1.8% increase in food bank use over a twelve month period with provision of service to 1,138 Island children (Tsering, 2005).

In the United States, concern for the nutritional status of children living in poverty or otherwise at risk for food insecurity has resulted in the development of a number of national food programs and the availability of subsidized school meal programs (Stang & Bayerl, 2003). In Canada, the development of school food programs has been more random, supported frequently by the efforts of volunteers and funded by a variety of means including public and private foundation grants, and donations (Hyndman, 2000; McIntyre, 1993). Similarly on Prince Edward Island, public and private funders including The Canadian Living Foundation/Breakfast for Learning Canada, a national charitable organization whose mission is to ensure that children attend school well nourished and ready to learn, provide funding to support Island school food programs.

2.2 Children's Eating Habits

Documented changes in children's eating habits have also stimulated interest in schools as promising environments in which to intervene through policy initiatives that support and promote healthy food choices. A lack of Canadian food survey data prohibits an extensive understanding of changes in Canadian children's eating habits, however, some information is available from the United States (Taylor, Evers & McKenna, 2005). As part of the Child and Adolescent Trial for Cardiovascular Health study the eating patterns and food choices of third grade students in Minnesota were followed over a five year period. The study team observed an increased intake of soft drinks, reduced intake of milk and fruit juice and reduced consumption of breakfast during this period (Lytle, Seifert, Greenstein & McGovern, 2000).

Breakfast skipping was also observed in the "....[US] Nationwide Food Consumption Survey of 1965 and the 1981-1991 Continuing Survey of Food Intakes by Individuals... the proportion of boys eating breakfast declined from approximately 90% in 1965 to 75% in 1991, while girls' breakfast consumption dropped from 89% in 1965 to 65% in 1991" (Lytle, et al., 2000, p. 222). In a survey of Prince Edward Island students in grades four to eight, 58.3% of students surveyed reported eating breakfast daily in contrast to 71% of males and 67% of grade six females surveyed in 1998 (Evers, Taylor, Manske & Midgett, 2001).

As suggested by survey data, many school-age children arrive at school without breakfast which has generated interest in the effects of breakfast on academic performance and classroom behavior (Health Canada, 2004; Pollitt & Matthews, 1998; Taras, 2005). Research on this topic encompasses studies from developing and developed countries, studies of short duration and longer periods and includes a variety of program types from universally free feeding programs to experimental settings. Kleinman et al. (2002) and Murphy et al. (1998), in studies of inner city schools in the United States, reported that students with low nutrient intakes improved math scores and attendance following initiation of breakfast programs. Similarly, Powell and colleagues (1998) observed improved math scores and attendance in response to a school breakfast program in Jamaica. In a review of the relationship between breakfast and cognitive issues, Pollitt and Matthews (1998) suggested that the available evidence supports the importance of breakfast in enhancing performance of short term academic tasks involving memory and the contribution of breakfast to improving overall nutrient intake, particularly in children who may be nutritionally at risk.

Children's consumption patterns from some food groups have changed. Health Canada

(2004) in *Trends in the Health of Canadian Youth* reported cumulative results from three surveys of over 6,000 students in grades six, eight and ten. While the results do not quantify amounts consumed, from 1990 to 1998 the consumption of fruits and vegetables daily by male students fell from 77% to 69%. During the same period the consumption of fruits and vegetables daily by female grade six students fell from 84% to 77% (Health Canada, 2004). In this survey daily consumption of raw vegetables declined between 1990 and 1998 for all age groups while those reporting daily intake of potato chips (22% males and 15% females) and French fries (13% males and 8% females) remained consistent (Health Canada, 2004). In comparison to the Health Behaviour of School-Aged Children Study cited previously, a higher proportion of Island students (28.1%) reported daily consumption of French fries, potato chips (43.3%) and soft drinks (45.9%) (Evers, et al. 2001).

Consumption of soft drinks by school aged children has received special attention because soft drinks are a daily part of the diets of a substantial proportion of children. The presence of soft drink vending machines in schools may also provide a revenue stream that is impacted if school nutrition policies limit or prohibit the sales of soft drinks. United States food survey data revealed that "...soft drink consumption among children increased 41% between 1989/1991 and 1994/1996..." (French, Lin & Guthrie, 2003, p. 1326). The consumption of 'regular' rather than calorie reduced soft drinks has resulted in these drinks providing additional calories and the largest proportion of added sugars in the diet of children (Ludwig, Petersen & Gortmaker, 2001). One concern related to this trend is that children who consume large amounts of soft drinks may not compensate for these additional calories with increased activity thereby increasing their risk of weight gain (Harnack, Stang & Story, 1999; Mrdjenovic & Levitsky,

2003). Mrdjenovic and Levitsky (2003) demonstrated in a study of children 6 to 13 years old, that energy intake from solid foods remained the same regardless of the amount of sweetened drinks consumed. In a study of children in grades four to six Cullen, Warneke and deMoor (2002) reported that children with the highest intake of sweetened beverages consumed an extra 330 calories per day compared to children who did not use sweetened drinks. In another study, Ludwig et al. (2001) reported that the "...odds ratio of becoming obese among children increased 1.6 times for each additional can or glass of sugar sweetened drink that they consumed every day" (p. 507).

Interest in the increased consumption of soft drinks by school aged children has also centered around the potential displacement of milk and other more nutrient dense beverages in the diet. In an effort to explain observed trends towards reduced milk intake, Mrdjenovic and Levitsky (2003) confirmed that higher intakes of sweetened drinks resulted in reduced consumption of milk. Harnack et al. (1999) quantified the observation that soft drinks replaced milk and fruit juices by observing that "...intakes of nutrients concentrated in milk (calcium, riboflavin, vitamin A and phosphorus) and fruit juices (folate and vitamin C) tended to be lower among youth in the highest soft drink consumption category..." (p. 439). These dietary changes may have long term consequences as reduced intake of calcium rich foods such as milk during times of peak bone mass accumulation may increase an individuals' lifetime risk for fractures and disability (Yen & Lin, 2002). Taras and colleagues (2004) suggested that "....a 5% to 10% deficit in peak bone mass may result in a 50% greater lifetime prevalence of hip fracture" (p. 152). Cullen et al. (2002) also reported that high intakes of soft drinks negatively influenced children's consumption of other foods as "...fruit consumption was approximately 57% lower for

students in the highest tertile of soft drink consumption...." (p. 1477).

Several authors have created detailed schematics in an attempt to represent the complex interplay of connections between individual, family, social, cultural factors and environmental influences such as: food availability, marketing/access, behavior/activity patterns, food preparation and economic factors that contribute to dietary habits (Dietz & Gortmaker, 2001; McGinnis, Gootman & Kraak, 2006). Schools, as an important social environment, can potentially influence children's eating habits on a number of levels. Through their experiences in school, children may have an opportunity to develop knowledge, belief systems and skills to select healthy foods; access a wide variety of food choices stimulating acceptance of new foods; and observe peers and influential adults modeling healthy food choices (Bordi, Park, Watkins, Caldwell & Devitis, 2002; Briggs, Safaii & Beall, 2003). Conversely, schools may also offer unhealthy food choices in cafeterias and other food services, present conflicting curricular messages, market unhealthy foods to students and miss opportunities to emphasize health promoting messages.

2.3 School nutrition policy development

Schools have been identified as an environment through which to reach large numbers of children and influence their general health behaviors through health policies (Vereecken, Bobelijn & Maes, 2005). In one example, Schmid, Pratt and Howze, (1995) likened policies on smoke free places to policies promoting healthy eating behaviors. Though schools do not reach the entire population, nutrition policies can be part of cumulative efforts to improve the nutritional health of children by increasing the number of supportive nutrition environments to which children are exposed. Though evidence specifically related to the long term effects of

elementary school nutrition policies is limited, some research suggests that this approach can positively impact the health of children. Vereecken and colleagues (2005) surveyed Belgium-Flanders primary and secondary schools and found that nutrition policies and restricted availability of unhealthy foods were associated with lowered intakes of potato chips and soft drinks. In Nova Scotia, a survey of grade five students demonstrated that children participating in comprehensive healthy eating programs had healthier diets, lower levels of overweight and obesity and higher levels of activity compared to children who were not exposed to these programs (Veugelers & Fitzgerald, 2005) . Finally, in an analysis of United States school breakfast programs, children who participated in these programs consumed overall healthier diets containing a lower percentage of energy from fat and had improved vitamin status (Bhattacharya, Currie, Haider & Variyam, 2004).

Despite some promising evidence that school nutrition policies are beneficial to the health of children, many schools do not have formal policies. In the United States, the Centers for Disease Control and Prevention conducts periodic surveys of school health practices (School Health Policies and Programs Study - SHPPS). The most recent survey, conducted in 2000, reported on specific nutrition practices in schools and the presence of overall nutrition policies (Jones, Brener & McManus, 2003). Surveys of individual state policies, such as a survey of Minnesota schools by French, Story and Fulkerson (2002), have also been conducted. In this survey of secondary schools, 65% of principals believed that it was important to have a nutrition policy for their schools but only 32% reported having a formal policy (French et al., 2002). In a study involving California school board members, only 33% of those surveyed reported having a school nutrition policy in their district, despite the belief by a majority of respondents (63%) that

proper nutrition could reduce children's risk of developing chronic disease in the future (Brown et al., 2004). In a survey of Saskatchewan schools, Berenbaum (2004) reported that "...most schools do not have formal food and nutrition policies or guidelines. Many have informal guidelines. Most commonly, guidelines state what foods could be served" (p.5). A PEI survey by Taylor (2002) indicated that only two of 64 individual schools (3%) had a formal written policy, while only 5% had informal policies that limited peanuts or "junk foods" (J. Taylor, personal communication July 10, 2004). The landscape of jurisdictions with school nutrition policies in Canada is rapidly changing though, in that eight out of ten provinces (Newfoundland, New Brunswick, Nova Scotia, PEI, Quebec, Ontario, Alberta and British Columbia) have indicated that they have adopted or plan to adopt school nutrition policies in the next year (J. Taylor, personal communication, November 20, 2006).

The development of school nutrition policies may bring to the forefront conflicting viewpoints on the role of schools. Stanford (1998) suggested that generally the "...purpose of schooling is often defined as the transmission of culture..." (p.59) while Sergiovanni (cited in Hargreaves, 1996) contended that "....schools must play a more vital and central role in community building; in providing care, developing relationships, creating a common purpose, and fostering a sense of attachment among people..." (p. 6). Advocates for health promoting schools have argued in support of health promotion in schools as "the way we do our thing" rather than "one more thing" for schools to do (Valois & Hoyle, 2005, p. 46). School nutrition policies and supportive environments may be included under the description of health promoting schools and comprehensive school health. As a model that seeks to link health within the larger school and community, several key elements of health promoting schools have been identified:

creating healthy policies and supportive environments, strengthening connections between the community and schools, developing health decision making skills and integrating health throughout the curriculum and across grade levels (Anderson & Piran, 1999; Kendall, 2003; St. Leger, 1999). Regardless of the terms used to situate school nutrition policies within the larger and ongoing discussion of the role of schools, developing policies ultimately requires identification of a process to support this work.

Schools and the communities in which they are situated have been described as complex systems composed of relational boundaries of varying degrees of strength and permeability (Sarason, 1990). Policy development processes seek to work within and between areas in this complex system to locate spaces to stimulate policy development. Boyd (1976) suggested that communities permitted school officials to govern schools up to a point where school activities might conflict with the values of that community. Oakes, Welner, Yonezawa and Allen (1998) extended this concept to include a "zone of mediation" where new policy proposals could be shaped through interaction with the local context. Application of this concept to school nutrition policy development underscores the important role for a policy working group in this process. If nutrition and school system experts and community representatives can work collaboratively to stimulate public interest in the development of school nutrition policies while mediating emerging concerns from within the school system and the community then potential exists to create new opportunities for policy dialogue.

An outstanding question remains: what is the optimal process then to stimulate school nutrition policy development? Results from federal school change studies in the United States have emphasized the importance of "bottom up" or school level participation in school change

efforts (Boyd, 1989). Fullan (2001) supported this sentiment in his description of the power of involvement at the school level:

> ...once the folks at the grassroots realize they own the problem, they also discover that they can help create and own the answer – and they get after it very quickly, very aggressively, and very creatively, with a lot more ideas than the old style strategic direction could ever have prescribed from headquarters (p.112)

Consensus on the optimal process for school policy development is not universal. In an analysis of the implementation of food and nutrition policies in New Brunswick schools, McKenna (2003) described the rejection of school nutrition policies that were developed using a 'top down' process. In this example the policy development process was characterized by a lack of consultation with school personnel who ultimately did not fully implement the policy as intended. Oakes and colleagues (1998) though cautioned against a focus on exclusively bottom up policy development approaches. They contended "...that top-down and bottom-up reforms need not be [viewed] as dichotomous" (p. 967) but rather suggested that an equal measure of involvement and commitment was required from top level leaders to support the long term sustainability of bottom up change initiatives. Indeed even in 'bottom up' or grass roots change processes, the engagement of school system administrators is acknowledged as important to support continuation of a newly changed school environment, for without this support the sustainability of the change may be at risk (Oakes, Welner, Yonezawa & Allen, 1998). This sentiment is supported by Fullan (1991) in his description of the role of school administrators in school change:

> ...even when the source of change is elsewhere in the system, a powerful determining

factor is how central office administrators take to the change. If they take it seriously, the

change stands a chance of being implemented...if they do not, it has little chance of going

beyond the odd classroom or school... (pp. 197-198)

Identifying the optimal policy development process then may still rest largely with those leading

policy development who, based on their knowledge of the particular context, may choose to

weight the process towards a 'bottom up', a 'top down' approach or seek to achieve a balance

between the two approaches.

2.4 Change in schools

Too often, we approach innovation with a powerful double standard: we see the value of

change <u>by other people</u>. Change that we seek from others we understand in the positive

terms associated with growth; change that others seek from us we experience in the

negative terms associated with loss (Evans, 1996, p. 38) [emphasis in the original] .

Is change in schools a unique phenomenon? The answer to this seemingly simple

question may be both 'yes' and 'no'. While this section will address some of the unique

challenges faced by schools, some authors have questioned the merits of positioning change in

schools as particularly unique. For those within schools who are faced with a seemingly endless

barrage of change initiatives, it may offer some measure of comfort to situate change in schools

within a larger social context where from Sarason's (1996) perspective: "....ours has long been a

society in which all of its major institutions have been under pressure to change" (p. 45). If as

Valois and Hoyle (2005) suggest that "...schools follow society rather than lead it" (p. 46), it is

not surprising that schools in a rapidly changing society face an expectancy to continually

change. While change may not be particularly unique to schools as a major social institution,

how change is approached in this context may be unique.

The relationship between those within the school system to those outside schools who are interested in stimulating school change may be one unique feature of the change process. According to McKenna (2000) the fact that calls for the development of nutrition policies tend to originate from outside of the school system may pose a unique challenge to the development of such policies, particularly when those advocating for change are viewed as outsiders with a limited understanding of the system that they are seeking to change. Sarason (1996) challenged the tendency of those in the education system to focus on staff within schools as isolated entities while relegating all others to an "outside role" (p. 10). Hargreaves (1996) highlighted this tension between schools and the outside world when he proposed that "schools can no longer pretend that their walls will keep the outside world at bay" (p. 4). This may be particularly relevant when addressing complex social and health related matters that require participation from a wide range of community providers and agencies to support and sustain change (Valois & Hoyle, 2005). This sentiment was reiterated by Fullan (1993) who suggested that a connection to the broader social environment was crucial for success in a change initiative. Wilson and Corcoran (as cited in Fullan, 1991) identified several possible benefits to a strengthened connection between schools and the broader social environment including: increasing the technical capacity within schools; building political support for the school; positive role modeling to students of community participation and fostering interest in quality of life. Alternately, those outside the school system may be equally challenged to see themselves as an integral part of the school system rather than an external advocate for change (Sarason, 1996).

To draw together schools and those wishing to initiate change within schools requires

development of an appreciation for the existing systems within schools and its culture. Stanford (1998) suggested that "the school, like other complex systems, is a system within systems within systems" (p.59). Researchers have attempted to explain such complexity in various ways. Banathy (as cited in Squire & Reigeluth, 2000) advocated the use of three 'lens' through which to view the school system: an overall picture (to understand the environment and context of the school system), a function structure lens (to reflect on the purpose, components and relationships within the system) and a process lens (to understand how the system achieves its purposes) (p. 148). While Sarason (1990) suggested that though the parts of the complex system may be dynamic and resist precise description, boundaries of varying strength and permeability do exist within the system. As was discussed earlier, it is between these boundaries that the potential to mediate policy development may arise.

Those who wish to create change in schools are not neutral, but rather approach the task with various personal values and assumptions about schools based on their past experiences as students and within their community (Sarason, 1996). Similarly, those within school systems hold values and have created cultural norms which define how change will be approached within their system. Sarason (1990) suggested that the ability to understand the culture of a specific school and the environment in which it is situated may be challenged by biased personal perspective and lack of knowledge about change in schools. Thus it may be most useful for those who are interested in school change to understand that schools have a unique culture shaped by the physical and social environment, the individual and collective values of its members and basic assumptions that guide behavior of school staff members (Evans, 1996).

A common criticism of school change efforts is that the multidimensional nature of the

proposed change is not well understood by those proposing the reform (Fullan, 1991;Hargreaves,

1996; Sarason, 1996). At its best, change in schools may improve conditions, leverage new

resources, and/or introduce exciting educational approaches, while at its worst change

"....produces overload, unrealistic time-lines, uncoordinated demands, simplistic solutions,

misdirected efforts, inconsistencies and underestimation of what it takes to bring about reform"

(Fullan, 1991, p. 27). Evans (1996) offered the analogy that policy makers tend to see 'the forest'

- that is the global benefit of the proposed reform whereas teachers and principals see 'the trees' -

the potential individual and daily effects of the proposed change (p.296). A balanced attempt to

understand both the large and small effects of change from the many varied perspectives of those

affected by the change may be one strategy to ensure that broader impacts of change are

considered (Fullan, 1991).

    2.4.1 Models of change. While some authors have resisted offering a 'how-to' formula for

directing change in schools, principles from other models and strategies related to organizational

change have been applied to the school context. Razik and Swanson (2000) reviewed four

models for planned change: problem-solving models, research-development-diffusion-utilization

models, social interaction, and linkage models. Problem solving models are characterized by four

basic steps: 1) identification of a problem; 2) proposal of alternative solutions and actions to

address the problem; 3) selection and implementation of a solution and 4) evaluation (Razik &

Swanson, 2000). Research-development-diffusion-utilization model (RDDU) describe a series of

sequential steps for planned change encompassing: development of knowledge through the

course of research; pilot testing or development; diffusion of the new knowledge to the system;

and supported, encouraged utilization of the change (Razik & Swanson, 2000).

Social interaction models are characterized by four discrete stages: 1) knowledge: change leaders gain knowledge of the proposed change; 2) persuasion: members of the organization are provided with information about the change; 3) decision: the proposed change is accepted or rejected; and 4) confirmation: colleagues confirm that the acceptance or rejection of the change was appropriate (Razik & Swanson, 2000). Of the four models presented by Razik and Swanson (2000) linkage models offer an approach that addresses the potential role for those internal and external to school systems in supporting change. Linkage models for planned change are characterized by six stages: 1) definition of a problem; 2) creating communication linkages inside and external to the system to be changed; 3) research on the problem; 4) identification of a solution; 5) implementation of the solution; 6) evaluation of the solution (Razik & Swanson, 2000).

In another approach, Evans (1996) contrasted two organizational paradigms of change: a traditional rational-structured approach and a new hybrid: strategic-systemic. Evans (1996) concluded that a strategic-systemic approach that focused on people and cultural change in a rapidly changing environment such as schools, attended to the psychological complexities of change most appropriately. Three general phases of educational change processes have also been suggested: an initiation or mobilization phase proceeding a decision to undertake a change initiative; a two to three year period of implementation or initial use and a third phase in which the change was incorporated into the routine school system (Fullan, 1991; Holcomb, 2001; Horsley, Loucks-Horsley, Phlegar & Perez-Selles, 1990). Concepts of organizational change from the business world have also been applied to the school context. As one example, Kotter (1996) proposed an eight stage process detailing steps to achieving major change. The stages

include: "1) establishing a sense of urgency; 2) creating a guiding coalition to lead the change process; 3) developing a vision and strategy; 4) communicating the vision; 5) empowering action; 6)achieving short term wins; 7) building on achievements to support further change and 8) anchoring the change in the culture" (p. 21).

Regardless of the number and name of the stage or phase specified, the literature reveals common roles for potential agents of change and steps to supporting change within education systems, these being: supporting change within the school, knowledge sharing and communication, relationship building, leveraging resources, implementing partial solutions and coping with resistance to change. In the chapters that follow, the findings of this study will explore the enabling and barrier factors that characterized this school change initiative and the roles played by individuals and groups that supported the development of school nutrition policies in elementary and consolidated schools in Prince Edward Island.

Chapter 3

Research Design and Methods

Denzin and Lincoln (1994) described four basic parameters to be addressed in research designs: the connection of the design to the research paradigm, the unit of analysis, the research strategy and the methods for collecting and analyzing the data. The following sections will outline the influence of phenomenological inquiry in developing the approach to this project; the identification of participants that formed the units of analysis; the use of individual interviews as an empirical method and the strategies that were applied to analyze the resulting data.

3.0 Research paradigm

In this study gaining a deeper understanding of the perspectives and lived experiences of individuals most involved with the development of elementary school nutrition guidelines was of primary importance. Through reflection on their experiences participants might access two layers of knowledge: individual and collective, about the enabling and barrier factors in the development of school nutrition policies. Individually, participants might be expected to hold their own personal viewpoints on the experience of developing school nutrition policies that through the course of the interview process would be made explicit and enriched with further meaning through reflecting on the experience (Burch, 1989). The development of school nutrition policies was also experienced collectively as individuals formed school teams and participated in networking meetings. This collective experience of the school teams and networking meetings permitted those most involved with an additional opportunity to develop what Schutz (1970, as cited in Denzin & Lincoln, 1994) called stocks of knowledge or collective understandings. Finally, the researcher would hold viewpoints, assumptions and values that

would require reflection and identification particularly during data analysis. To address these issues of experience in a real world setting phenomenology provided a research framework. Phenomenology has been described as "...the study of structures of consciousness as experienced from the first-person point of view, along with relevant conditions of experience" (Smith, 2005). As influenced by this paradigm then individual interviews were selected for data collection as a means to describe barrier and enabling factors as identified by participants.

While the development of school nutrition policies was not considered in isolation from other contextual factors, as a researcher I reflected on my personal assumptions and biases to, as Schutz (1970) suggested, attempt to set "...aside one's taken-for-granted orientation..." to the phenomenon under study (cited in Denzin & Lincoln, 1994, p. 263). Reflecting on these beliefs and viewpoints, particularly prior to embarking on field work, did not necessarily diminish the role of the researcher in interpretation the findings. Bruner in *The Culture of Education* (1996) stated "..understanding something in one way does not preclude understanding it in other ways"(p.13), therefore I considered multiple perspectives coupled with my own reflections as integral pieces towards creating a greater understanding of the development of school nutrition policies from the perspective of those actively involved in the process.

3.1 Site and Population Selection

The criterion for participant selection for this study focused on identifying individuals most directly involved in leading this process as these participants could provide relevant insights into the policy development process. To develop the selection criteria, the historical time line of the development of school nutrition policies was reviewed to identify possible participants. The selection of the participants for this study therefore was influenced by the initial and ongoing

participation of the lead schools' school nutrition teams and the policy working group in the nutrition policy development process.

Participants were chosen from each school district. To reflect the school system, principals and teachers from different school types (consolidated and non-consolidated elementary schools), linguistic background, and school size were identified as possible interview participants. Efforts were also made to recruit participants from lead schools in geographically diverse locations (east, central and west). Following the identification of potential participants for the study, a meeting was held with the Project Director of School Nutrition Policy Development to confirm that the identified schools were lead schools that had participated and were continuing to participate in school nutrition policy development *(See Table 1, Appendix x)*. Potential participants were contacted either in person at school team network meetings, by email or by telephone to provide information on the study and determine their interest in being interviewed. Up to three attempts were made to contact potential participants. The recruitment strategy did not yield as many participants as planned, notably, no parent members of the school teams or school board members agreed to be interviewed. Members of one school team, who initially accepted study information packages, ultimately did not respond to follow up requests for an interview. In total, four lead school principals or vice principals, three teachers and five members of the School Healthy Eating Policy Working Group were interviewed.

3.2 Ethical Issues

The proposed study methodology, including draft data collection instruments, participant information letters and consent forms were reviewed and approved by the University of Prince Edward Island Research Ethics Board in September 2004. To ensure the ethical treatment of

study participants:

- participants were provided with a plain language information letter explaining the intent of the study and its potential risks and benefits;

- each interview was tape recorded and transcribed verbatim by the researcher;

- transcripts were reviewed by participants for errors, omissions or misrepresentations;

- pseudonyms were used to protect the confidentiality of participants and identifying places and names were removed from transcripts.

Interviews were stored electronically on disks and a paper copy of each interview, consent forms, interview notes and tapes were stored in a locked file cabinet at the University of Prince Edward Island and will be kept for a period of three years. A paper copy and an electronic copy of the researcher's journal remains stored at the University of Prince Edward Island in a locked file cabinet.

3.3 Data Collection Methods

Participant interviews and a document review (internal) provided data for analysis. The use of interviews permitted individual world views to be explored to create an understanding of how these multiple realities influenced the policy development process. Individual, one to two hour interviews were conducted with participants between December 2004 and July 2005. The timing of these interviews was crucial to access information about the policy development process when participants were still actively engaged in the process and prior to the first school year when the policies were scheduled for implementation in any school district. The interviews were conducted using an open ended interview guide which was constructed to elicit perspectives on the policy development process (*see Interview Guide, Appendix x*).

A document review was also performed in order to identify enabling and barrier factors in the development of elementary school nutrition policies. This decision to review relevant documents was undertaken for several purposes:

- as an unobtrusive way to examine supplementary data sources and subsequently triangulate enabling and barrier factors identified during participant interviews;

- to examine a new data source for "manifest" or surface meanings and "latent" or deeper meanings (Holsti, 1969);

- to uncover new enabling and barrier factors to nutrition policy development.

During the course of this study, as a member of the School Healthy Eating Policy Working Group, I had access to the documents for review. The documents reviewed represented the time period from June 2003 to October 2005 (inclusive) and included written materials produced as a result of the work of the School Healthy Eating Policy Working Group:

- agendas and meeting minutes;

- researcher field notes from the School Healthy Eating Policy Working Group meetings;

- minutes from networking meetings of school nutrition teams;

- memos to lead school teams from the School Healthy Eating Policy Working Group;

- general memos/newsletters to elementary and consolidated schools that included reference to the nutrition policy development project;

- school nutrition policy drafts;

- annual reports from the Healthy Eating Alliance.

A research diary and memos were constructed to explore the researcher's values, assumptions and reflections on the interview interactions and emerging themes. As related by

Mertens (1998) "...research is a product of the values of researchers and cannot be independent of them " (p. 11) therefore these materials also provided a way to document the researcher's changing perceptions throughout the course of the study.

3.4 Data Analysis

Understanding the process of developing school nutrition policies in the context of this study involved seeking to understand a complex process with strong social influences. From the unique perspective of participants most actively involved with the process, actions, beliefs and attitudes that acted as enablers or potential barriers in the development of nutrition policies were identified. Although it is recognized that in individual schools, districts and other provinces additional unique factors may act to enable or block the development of school nutrition policies, this inquiry sought to identify and understand the factors that characterized the emerging work in Prince Edward Island elementary and consolidated schools. This analysis did not begin with pre-existing theory on the development of school nutrition policies but rather employed a mix of inductive and deductive analysis to identify relevant factors.

Analysis of interview data began with the verbatim transcription of interview tapes and notes. As the tapes and notes were transcribed, edited and reviewed, initial patterns and emergent themes were noted and coded by the researcher. Field notes detailing the researcher's reflection of the interview interaction, including: assumptions, emerging questions and recognized preconceptions were reviewed to attempt to create a contained awareness or "bracket" these issues (Hatch, 2002). The goal of this stage of the analysis was to identify themes from each transcript using the language that participants used to describe their experiences (Barritt, Beekman, Bleeker & Mulderij, 1984). A contact summary sheet, which summarized the data to

enabling and barrier factors, was prepared following each interview. Contact summary sheets were then grouped according to profession: principals, teachers and the policy working group. Similar enabling and barrier themes were organized together and then common emergent themes were tested across each member of the professional group and then between the groups for an additional comparative analysis of 'fit' and to explore alternative interpretations (Huberman & Miles, 1994). This task was facilitated through the use of matrices and other schematics that helped to organize the data. Additional analytic categories and themes were generated by the researcher through literature review, brainstorming exercises, and in consultation with co-investigators (Glesne, 1999 as cited in Patton, 2002).

The document review analysis began by assembling the documents chronologically to facilitate a sequential review of the material. Each document was reviewed and the data were reduced by identifying enabling or barrier factors in the development of elementary school nutrition policies. A notation of initial analysis on the enabling or barrier factor was applied to the material and the data were summarized in tabular form. Themes that could be categorized as being either enabling or barriers, depending on the context, were identified in the data table as 'dual factors'. After the initial data reduction, the data tables were reviewed and further notations of analysis were entered. All enabling factors were then extracted from the data table and the material was placed in a new data array table to determine if larger analytical categories could be assigned. Following the identification of categories, the data were extracted into separate arrays to compare and contrast the themes and determine if new categories emerged. This process was repeated for the barrier and dual factors.

3.5 Trustworthiness Features

Guba and Lincoln (1994) suggested a parallel between trustworthiness features commonly used in quantitative research and those applying to qualitative research. They paralleled internal validity to credibility; external validity to transferability; objectivity to confirmability and reliability to dependability (Guba & Lincoln, 1994). These possible parallels were used to address traditional trustworthiness features in this qualitative study.

Patton (2002) suggested that credibility of qualitative research could be enhanced in three ways: demonstration of rigorous methods, credibility of the researcher and philosophical belief in the value of qualitative research. In this study, rigor was demonstrated through a detailed description of methods and procedures used to execute the study which was documented in the researcher's journal, a commitment that findings be supported by and reported using data, and that data be presented in a logical manner. However, issues of credibility extend beyond data collection, management and analysis; as a researcher I acknowledge that several factors may serve to enhance or detract from my perceived credibility by others. As a registered dietitian, I may have been perceived by some as credible to initiate this study, whereas others may have been concerned about a potential pre-existing bias to focus excessively on the positive factors that influence policy development. To counter this, the interview guide was constructed in order to explore both enabling and barrier factors in equal measure. As an employee of the Department of Health in PEI at the time of the study, this may have been perceived as reducing the researcher's credibility since this study was based in an elementary school setting that is traditionally the domain of education professionals. Entry into the field, which was facilitated by members of the School Healthy Eating Policy Working Group, may have by association, either enhanced or reduced the researcher's credibility, depending on the attitude of the audience. Finally, as a

novice researcher there is some risk that the results may be viewed with skepticism due to my

inexperience in the field. In this case, the guidance and expertise of the research supervisors,

which included a non-nutrition researcher, may enhance the perceived credibility of the study.

Some audiences may be interested in generalizing the findings of this study towards the

policy development process at other grade/age levels. Therefore, one challenge in reporting the

findings was to maintain careful descriptions of context so that readers would remain aware of

the environment(s) to which the findings apply.

Qualitative research may be received with a degree of skepticism by audiences unfamiliar

with this type of research. The use of participant accounts, the close involvement of the

researcher in the environment and with participants may also be of concern for some audiences

(Walker, 1974 as cited in Haigh, 2004). The data, its collection and analysis procedures may also

be a source of uncertainty for some. In an attempt to relieve some of these concerns, a study

protocol was maintained throughout the course of the project to detail process steps, decisions

and analysis procedures.

Dependability was demonstrated through the adherence to systematic processes and

procedures which were documented. Sufficient details on data analysis procedures and the

generation of themes were included to enhance the audience's confidence in the reliability of the

findings. Alternate explanations to data interpretation were also presented in an effort to

challenge and explore the understanding of the process.

In summary, the approach to this study was influenced by phenomenology as first person

experiences were examined through a series of individual interviews which asked participants to

reflect on their experiences to identify enabling and barrier factors in the development of school

nutrition policies. A series of relevant documents were reviewed to provide additional data,

identify new enabling and barrier factors and confirm the relevance of themes identified through

the interview process. The research diary and memos were used to reveal and distinguish the

researcher's perspectives as the study progressed.

Chapter 4

Results and Discussion

Elementary students attend one of forty eight elementary or consolidated schools on

Prince Edward Island. The school nutrition environment varies somewhat from school to school

dependent upon food suppliers and programs but the majority of these schools do not have

cafeterias. Free or subsidized food programs such as breakfast programs supported by Breakfast

for Learning and school milk programs are offered in the majority of elementary and

consolidated schools. These schools also offer canteen services with foods provided by local

vendors and special lunch hot dog or pizza sales as fund-raising events. A PEI survey by Taylor

(2002) indicated that only two of 64 individual schools (3%) had a formal written policy, while

only 5% had informal policies that limited peanuts or "junk foods" (J. Taylor, personal

communication July 10, 2004).

During the interviews with the research participants and through the document review, a

series of factors were identified which enabled the development of nutrition policies in

elementary and consolidated schools on Prince Edward Island. The roles assumed by specific

groups such as the School Healthy Eating Policy Working Group, principals and teachers were

examined to gain an understanding of how these groups might affect policy development.

Participants identified several conditions and actions required to navigate change during the

policy development process. Participants also identified instances where pressure exerted by the

media, public opinion and school staff and the foods available at school enabled policy

development while on other occasions these same forces were a barrier to policy development.

The following sections will examine each of the enabling factors in greater depth.

4.0 Enabling Factors

4.1 Policy working group

Stanford (1998) described the importance of a critical mass of interested people required to initiate a school change process. Anderson and Cox (cited in Horsley et al., 1990) further characterized this type of group as a "...core of well-regarded and capable people to keep synthesizing and articulating the evolving view of the system" (p. 4). Kotter (1996), identified four essential characteristics that a group would require as a guiding force to support change initiatives: position power; expertise arising from varied and representative points of view; recognition as a credible group and proven leadership within the group (p. 57). The members of the School Healthy Eating Policy Working group contributed different perspectives and the majority held positions of power and/or influence in their respective organizations. Members also contributed different areas of expertise to the policy development process including: school administration, research, parent perspective, policy development, government, and nutrition. Beyond the main areas of expertise offered by individual members, the interactions between group members also influenced the roles that members played. In one example, a group member held experience as a policy analyst, parent and a member of the Home and School Federation and therefore could reflect on the process from several perspectives. Common philosophical ground and relationships between group members also supported the union of individuals from various areas of representation into a coalition to achieve a common purpose. In the process of navigating change by learning to work together as a group and learning more about the school world this group also demonstrated evidence of 'growing together'. Though policy development work may

be initiated by an individual or a group, the following section will examine the policy enabling characteristics of a policy working group comprised of representatives that were able to bridge the 'school world' with the 'nutrition world' in a way that enabled school nutrition policy development.

4.1.1 Bridging the school world and the nutrition world. Individual policy working group members brought both strengths and biases to the work. As expected, when individuals of differing experiences attempt to work together, a common understanding about the work and processes to accomplish tasks needed to be developed. As a representative from a school district, one member 'HP' was well versed in the policies and practical issues of school life and recognized the limited understanding of some of the other group members in approaching the development of school policies:

> The people on the project team... aren't up to their neck in schools. Schools are an
>
> interesting organization, there's nothing like it. The corporate models don't work and
>
> having gone through school, everybody thinks they're pretty much an authority but they
>
> understand what happens in a classroom but the other layer of the life of a school if you
>
> haven't been in it, you don't understand it very much...

While the individuals on the policy working group may not have held an equal understanding of school life, the value of other connections and expertise particularly in research, policy development and nutrition, were also deemed to be important within the group as related by one member:

> [DO] had really good connections ....and then the people ... at school boards, [MD] and I,

it really helped to talk their language and move them, so we got a really good perspective both from the dietetic thing, research side but also from the implementation and management side and the school side so I think that's helped.

In reflection, members of the policy working group recognized how their perspectives in working with others had changed. An individual with a nutrition background commented on her initial frustrations and the ultimate benefits of developing an improved understanding of issues of school life:

It's taught me about partnership, it's taught me about tact and respect for schools, when I first started working with schools I got very frustrated a lot of the time, why can't I call them in December? Why can't I call them in September?....

One member who represented the school perspective on the working group acknowledged the challenges of developing an understanding of school life with those from outside the school world:

....the whole thing's been a real interesting learning experience and in terms of working with outside groups in trying to facilitate their understanding of school and learning. What is as natural as breathing to us cause we've been in the school system forever ... other people don't get it and don't get the best way to do it and just learning that you have to stop and go through these processes with people ...

4.1.2 Finding common philosophical ground. Beyond the sometimes frustrating efforts to develop a shared understanding between the school world and outside groups on what might be possible and practical in the development of school nutrition guidelines, members of the policy working group held deeper unifying philosophical beliefs. The main unifying theme was the

intention to 'make a difference' for the benefit of children. Fullan (2001) identified this intention to 'make a difference' or in the author's words "moral purpose" as one of the elements of effective leadership during a change process (p. 3). One policy working group member acknowledged that though different motivations may have initially attracted individuals to the work, a common interest in improving the health of children maintained this interest in the project over the long term:

> ...I think [improving] the health of our children through good nutrition, however our
>
> motivations to be at the table may be different because of our positions or our roles, ...I
>
> think that we have been able to accommodate that so a lot of this work is done...

The idea of 'making a difference' was also expressed by members such as 'AL' who summarized the work as: "..making a difference through policy...". Another member focused on the potential of making a difference on a population level: "...we felt like we could make a difference for individual kids as well as populations of kids.." and for future generations of children: "...we're gonna make a real difference, not for these kids that are in front of us, but for their kids some day...". This future focus was also reflected in a school representative's thoughts on how the policy might be implemented:

> ...it's not just about management, and it's not just about the present, it's about the future
>
> and the schools are gonna have to move towards the provisions in the policy in the future,
>
> it can't be just built on what we can do right now, it's got to be built on what we
>
> should be....

4.1.3 Championing the cause. In the course of the interviews, members of the policy working group referred to "champions" of the development of elementary school nutrition

policies and the leadership that enabled the process to proceed at the school level. In the analysis of transcripts, champions were identified most frequently at the level of the policy working group and in schools. Some members of the policy working group described their commitment to the project as a 'passion' which stimulated action: "...I guess my passion started to build and build...I'm a big fan of, if you want something to happen badly enough you better be prepared to put your shoulder behind it, you cannot sit back...". Another group member recognized this commitment to the project and reflected on ways in which the champion stimulated their own dedication to the work: "...you just can't help but... want to do the right thing when she's speaking to you because of her passion and expertise .... she's able to mobilize people and...get them involved..."

The action of championing the work was also ascribed to a member of the policy working group who worked within the provincial government to secure funding for the project: "..so we put in this proposal and ...thanks to [CK] who championed it and took it forward we were able to get the funding which was a huge step....". Lead schools were also recognized as champions that provided a model of early project success that other schools could aspire to : "...key schools, who have been really vocal about what they want... they are champions within the whole school system and so that has really helped move things forward ..". Finally, another participant identified the role that unexpected champions may play and offered advice to be alert to the potential of these individuals in enabling policy development : "...identify champions for the process but also be aware that some unexpected champions may also arise, who pick up the process and run with it even faster than you think."

4.1.4 Leadership. The policy working group described two types of leadership through

their interviews: an 'out front' or formal type of leadership and 'behind the scenes' or informal type of leadership. One member of the working group, 'DO' was identified as an example of an individual possessing formal leadership of the work: "[DO's] passion and enthusiasm has been a real motivator and [she] has shown very strong leadership in looking for opportunities.." As 'DO' stated, the process of establishing group leadership may have reflected 'DO's' personal enthusiasm for the work and the challenges of working collaboratively with a diverse group:

... I sort of was self declared [lead on the project] ....I knew there had to be somebody that wasn't with the individual school districts, we couldn't have one school district leading and it couldn't be [CK] .... so it had to be somebody outside....

Another member of the policy working group examined the contrasting, but equally important nature of both 'out front' and 'behind the scenes leadership' by working group members and schools leaders:

...it was great to have the commitment from the government and the commitment in terms of the money to hire somebody, that was the key, but even more than that was the leadership from [DO] and the out front leadership from her and then the behind the scenes leadership from [CK]....not formal leadership, the informal leadership within the principal community we had a couple of those people and gave credibility instantly within the system..

Representatives from the school district were acknowledged for their ability to lead the other working group members through the process of developing draft policy language with schools and then identifying the optimal time and audiences to bring forward the draft policies for consideration:

They [representatives from school districts] were really good for advising us on the best

approach in terms of timing, channels of communication...who we should tell about this

first ....should we ask permission from these people, should we ask input from these

people... what approach should we take, so they have been really key in that way and they

also have their own personal experience from being involved within schools at different

levels....

As part of their leadership role the representatives from the school districts helped in the

early identification of potentially problematic areas in draft policy language. The school district

representatives also played a role in connecting the policy working group with school

administrators. In one example, a school district representative played a role in connecting a

researcher with school principals to share information:"...I got the reports done, [HP] came with

me back to the principals with the reports and I showed them the results...". In another instance a

school district representative described his role in guiding the policy development process within

the school district:

...another thing I do [is] sheparding it [draft policy] through the school board policy

development process and connecting with trustees and making sure they're ready and

making sure they understand as much as [they] can what it's about ...

Other members of the policy working group were also recognized for their leadership in

moving the policy development process forward. The Home and School Federation

representative's leadership in developing the school nutrition policies was recognized by a

colleague on the working group: "....[the Home and School representative has] been very helpful

in terms of shaping the language of the policy as well as bringing in that whole parent

perspective, things that would work from a parent's point of view...". Representatives from

provincial government departments provided leadership to the group in securing funding for

project personnel and resources and in the process of policy development:

> ...[the provincial government representatives worked in] shaping the language of the
>
> policy and also to get the support from...the provincial government to make them aware
>
> of these developments and to ..secure funding for the project, that's very key in keeping
>
> things moving..

In summary, in this process a policy working group comprised of members representing

each school district, a parent group, government, academia and nutrition professionals provided

the required expertise to guide the development of elementary school nutrition policies. Each

member of the working group assumed either formal or informal leadership roles that

served to guide and direct the progress of the project. The voluntary nature of this group attracted

individuals with common philosophical interests and commitment to improving the current and

future health of children which served collectively to overcome differing individual interests.

4.2 Principal as policy enabler

Evans (1996) characterized the importance of the principal in school change efforts as

"...indispensable to innovation. No reform effort, however worthy, survives a principal's

indifference or opposition. He is the leader closest to the action, the operational chief of the unit

that must accomplish the change" (p. 202). By acting as a buffer between teaching staff and the

outside world, the principal has also been described as the gatekeeper through which outside

groups with an interest in reform in school must either pass or meet with resistance (Fullan,

1991). For these reasons, capturing the principal's interest in a school change process is essential to increase the potential for a policy to be eventually implemented within the school.

A member of the policy working group described the integral role of the principal as a policy enabler in the following manner:

> ...principals were the key people and as they are in anything with a school they have to be ...not just neutral, but supportive for any kind of change to happen and the importance of how to approach them and when to approach them... it's an overload position, so you have to know when the overloads happen and how to deal with it and the idea to bring them in at the beginning, on the ground floor is really important ...

Principal 'JD' summarized his role in leading change in school by saying, "...I'm responsible at the end of the day...". Principals may make initial strategic decisions that enable or discourage school nutrition policy development; daily decisions that facilitate change for students and possess philosophies that may make changes in the school nutrition environment possible. In one school, the principal's initial decision supported the school to become a 'lead school' in the development of nutrition policies: "...he [the principal] actually thought that's something I would like and so he volunteered our school on the spot ...". A principal at another school related examples of decisions that he had made that shaped behavior at the student level and subsequently the foods available to students. In one case, the decision to restrict travel to a corner store reduced the temptation to purchase snack foods: "although we from time to time have an older student try to get permission to go to the corner at noon and I always say 'no'....".

4.2.1 Leadership to develop a critical mass of interest. Principals can act as a catalyst to help change happen by stimulating a critical mass of

interest in the development of school nutrition policies. One lead school principal described his initial leadership actions that brought the issue to his school:

> ...when it was talked about at a district principals' meeting ... I was sitting there thinking 'well, we're doing some of this, we're talking about this' and so I felt that it would be interesting to go back to the staff and see if they were interested and obviously they were and the rest is history.

Though the incident is summarized as the 'rest being history', the principal in this school had additional leadership work to do in the form of lobbying and achieving what Fullan (2001) termed "purposeful interaction" in order to develop a critical mass of interest at his school as he related later in the interview:

> I would say in certain aspects of it I had to be the sort of catalyst ... talking to people saying 'I think we have to meet', that kind of thing, just to sort of drive it a little bit and so I was involved quite a bit. ....that's I guess part of the lobbying or the angle that you approach when you try... and if you're sold on it yourself then you're trying to lobby people that can make your idea a little stronger ...

As one principal explained, involving others was key to the success of future policy implementation efforts but in the absence of consensus by school staff, leadership on the part of the principal was required:

> I think if you empower people to be involved in the process itself they are more willing to

buy into it, as opposed to a top down thing; 'The principal said we had to do this'. We use consensus decision making in what we're doing, but the bottom line is that if there's no consensus then I have to make a decision...

The principals appeared to create environments that fostered open communication and sharing of ideas by all those who were interested in the development of school nutrition policies. This application of a participative leadership style by principals may have naturally encouraged the involvement of other staff members at the school level in the development of school policies (Razik & Swanson, 2000). One principal emphasized the importance of communicating the rationale behind decisions that changed the school nutrition environment: "....you have to communicate why you're doing stuff. There's got to be a reason, you just can't do it because 'I said so', if you don't communicate and have a sound logic behind 'this is why we're doing this' you're going to have a tough sell."

Other principals reflected on the quality of their interactions with parent groups that helped to create the critical mass of interest in the development of school nutrition policies :

... I guess we have a better turn out [at Home and School] than a lot of places... anyone is welcome to provide input and they usually do.....we had made a winning condition here where who wanted to be involved, could be involved and a principal who already believed in the idea so therefore it made it somewhat easy for us to trace the route that we wanted to follow.

Creating the critical mass of interest in a particular school change may result in a shift of the principal's role from one of initial leadership towards one of supporting change to unfold within the school. As one principal reflected, the change in the school nutrition environment may

be one that is at slight odds with the principal's personal philosophy and may require a shift in

beliefs to support the change:

> I had philosophically, some reservations about it because I still think it is the
>
> responsibility of the parents to feed the children..but at the same time it's a societal thing
>
> and society has changed, so... you have to change yourself with the changing times...

The necessity of the principals' shifting role from one of initiating change to one of

letting change unfold within the school is underscored by the reality of the number and

complexity of demands that principals face on an ongoing basis. Sarason (1996) illuminated

some of these demands when he identified the co-existing constraints on the principal's power to

influence change initiatives citing pressures exerted by school administration, forces external to

the school and the principal's ability to ultimately control what occurs in individual classrooms.

As one principal observed, without interest from other staff at the school the likelihood that

school nutrition policies can be initiated becomes less realistic:

> ...bring people on board that they themselves become the catalyst [to develop school
>
> nutrition policies] because the 47 or 52 responsibilities of the principal that are listed in
>
> the school act, you add that on and you've got to be the sole person for that - it doesn't
>
> work, it can't work....

4.2.2 Philosophy. As a policy enabler, the principal's personal philosophy about the

school nutrition environment is a potentially powerful force for shaping what is possible and

what will happen at the school level. Principals voiced cautious optimism about the potential for

making changes in the school nutrition environment. This caution may reflect the principals'

understanding of the many opposing forces and pressures that act as barriers to healthy eating:

...we seed, we don't [know] what will grow after but at least we've put one chance on our side by seeding ideas and new tastes...you can't change the whole world but maybe make a small difference for some people anyway...

Despite uncertainty about the large scale impact of changing the school nutrition environment, a principal voiced his resolve to model healthy food choices and to reduce contradictory examples:

...my mind was set that at this school we will be serving as high quality food as possible...I'm of the school that if you have a chance to taste it, to associate emotion with the action of tasting the different type food... the chances are far greater that it's going to make a difference, a real difference than a poster on the wall to which you refer once every blue moon ...we cannot ask the kids not to eat any chocolate bars or to put aside their junk food and us walk around with junk food in our hands...

On another level, the principals described their overarching motivations for becoming involved in the development of school nutrition policies as an intent to benefit all students. The principals' motivation to 'do the right thing' reflected a philosophical belief similar to that held by the policy working group creating a supportive match between the two groups which enabled policy development, as described by one of the principals:

...if it's the right thing, which we feel it is the right thing, then it's easier to sell people on It....I always try to keep in the back of my mind...we're doing this for a very good reason - it's to help the kids that we teach, that's why we're here in school.....

4.3 Navigating Change

Finding the best possible path to achieve change in the nutrition environment of Island

elementary schools was a complex but essential enabling factor in this policy development process. Navigating change initially involved building a case for change by presenting information and confirming that stakeholders would support attempts to change the school nutrition environment. Support offered to schools from a variety of sources, both within and external to schools, was considered to be an enabling factor that eased the burden of change. While open communication reduced the uncertainty associated with change and provided stakeholders with opportunities to participate in creating the change. Efforts to integrate healthy eating within other aspects of school life and other curriculum areas were also identified by school staff as useful steps to help them make meaning of the proposed change. The following sections will examine the concept of navigating change by describing each of these steps in greater detail.

4.3.1 Building a case for change. According to Kotter (1996) building the case for change or "establishing a sense of urgency" is one of the initial steps to create major change in an organization (p. 21). Building the case for change through the formal or informal transmission of information can foster the identification of both problems and opportunities for action. Cline and White (2000) also suggested that sharing information to build a case for change could also prepare community members and partners to support healthy eating in schools. In this study, accessing credible information, particularly local research data, appeared to influence the participants' perception of the importance of developing school nutrition policies to improve children's health. A teacher reflected on the necessity of accessing those who have information to begin the process of enabling change: "...if you're gonna get the ball going you have to have someone that you're gonna come into contact with that will be able to provide you with the

information to get things rolling..". Some participants referenced formal sources of information

such as studies that had stimulated their concern on the issue of children's health:

> ...the Canadian Community Health Survey around overweight and obesity, and the
>
> nutrition survey that [researchers] were involved in 10 years ago that profiled PEI ....the
>
> school boards could actually see what programs and policies were in place as well as
>
> what was available in the schools in the canteens, in the vending machines, in terms of
>
> snack programs...it gave us a very good understanding of what was the current status and
>
> the other piece of data would be from Tremblay and Wilms that reported over the last
>
> couple of decades that ...obesity rates of our children have more than doubled ...
>
> ...the study of PEI eating habits that and the fact that it got national coverage, that was
>
> about a week long media cycle on PEI, it just kept pounding the message that we gotta do
>
> something..

Other participants referenced informal sources of information, such as media which

influenced the participant's perspectives. The movie, *Super Size Me*, was cited by participants

who had viewed the documentary as being influential, while other teachers had heard politicians'

messages of concern through media reports:

> ...I've watched ... 'Super Size Me' and ... I've listened to the politicians ... on health care
>
> dollars and putting the emphasis on increased activity and nutrition in the schools ...so
>
> there's gonna be less reliance [on emergency room services] because we have an active
>
> living lifestyle. It bothers me when I see studies that say 60% children are overweight...

Although the teacher referenced inaccurate information on the prevalence of overweight in Island

children, this information shaped their perceptions on the severity of problems in children's

health and convinced the teacher to take action.

In addition to research and media information, some principals indicated that they had

collected information from school surveys that also supported their decision to become involved

in the development of school nutrition policies. As the participants described, information on the

health of children created a degree of discomfort that directed their attention towards taking

action to improve the situation.

4.3.2 Testing policies in the real world. The development of school nutrition policies

necessitates testing the boundaries of draft policy ideas in a real world environment, across

varying contexts to determine the suitability of the policies. In this policy process, lead schools

provided the testing grounds for a new nutrition environment and therefore were early

'navigators of change'. This use of pilot schools, or what has also been deemed an

implementation of partial solutions, has been identified as a means to achieve short term

successes within a school change initiative (Horsley et al., 1990; Kotter, 1996). There are several

benefits associated with implementing partial solutions, including: achieving early success;

gaining information on problem areas to modify during the next phases of the initiative;

gathering project momentum; undermining negative responses to the change and as a source of

encouragement to those involved with leading the project (Kotter, 1996, p. 123). Implementing

partial school change initiatives also offers an opportunity to test alternative solutions to

problems encountered in the field and variations to the original change program (Fullan, 1991).

Finally, developing trust in the intent and process of the initiative through direct experience with

the proposed change can also create an environment that is both psychologically and

professionally safe for those within schools to experiment with new practices (Evans, 1996).

Participants advised that testing draft nutrition policies in the school environment should be done in small steps. Principals were particularly aware of the potential risks of making too many changes in too short a period of time in schools and offered several analogies to illustrate this point during the course of the interviews. One principal likened too much change, too soon to "missing the boat" thereby risking the gains achieved through early successes:

..I don't think we can make drastic changes, I think it's a process, I think we need to keep working and make a few changes. A few actions...that make a small difference but keep on going. I think it's a process of 2-3-4 years for schools ....because I think it's better slowly .... than try to go quickly and then miss the boat.

As suggested by this principal, change in schools often requires a long term investment of time that was not anticipated by all participants. Holcomb (2001) advised that:

...writers on school change speak of 3 to 5 years for a moderately complex change and 5 to 7 years for major restructuring to move from being an innovation to becoming a routine part of how the organization conducts its primary functions (p. 8).

Sarason (1996) also cautioned that the process to achieve school change occurrs within its own time frame:

...the effort to initiate a change in a complicated social-institutional setting in which there are different groups with different interests – all in a world not under one's control – has to assume that things will happen that will make additional demands on one's time (p. 285).

Time is also an issue for those affected by the proposed change, so groups wishing to implement change in schools should be cognizant of the burden that new practices may place upon teachers (Sarason, 1996). A member of the policy working group remarked that the time to develop draft school nutrition policies took longer than expected: *"...in the end we do have draft policy developed, it just took us a lot longer ... and it's actually taken a lot longer with all of the boards than what we had expected."* Representatives from schools though felt that extra time spent particularly in phasing in changes to fund-raising campaigns would afford more opportunity for people to adapt to the changes and incorporate these within the norms of school life: *"...encouraging and giving schools some time I think there's a one year lead time on cutting out the bar sales and giving people realistic time frames to get used to this, is important.."* As one principal summarized, the central issue in maintaining realistic time frames is to allow time to integrate policy within the fabric of school life: *"...after a while when things are done over and over again then it's not policy anymore it's the way we do things ... so it's gonna take some time, time is the thing ..."*.

4.3.3 Integrating healthy eating within other aspects of school life. Introducing new policies to an already full school schedule required school personnel to make sense of the proposed changes relative to their current experience. In order to make change, individuals often compare and contrast new information with what is known to them; this act of creating connections between new information and the present reality prepares an individual to adapt to new circumstances (Fullan, 1991). One way to establish these connections is to determine practical points for integrating new initiatives within the existing rhythm of school life.

During the participant interviews it was evident that lead schools were already integrating healthy eating with other curriculum areas such as language studies. One teacher reported knowledge of a literacy project: *"...I knew of a project that [another] school had done it was a combination of literacy and food.."*. While a principal related an interaction with students where the French names of foods were practiced after a healthy snack program:

I said: 'Oh good, well what did you have?' and then we practice our French words, which is always interesting and then hopefully they will remember the name of the fruit they ate today....

At another school the introduction of new food services offered an opportunity to teach students mathematics and research skills:

...we started with 3 types of pizzas.... and then we asked the students to do a survey. I teach a math class so we were doing data collection at the time and so I used this as part of them working through the data collection and doing graphs...

The principal also recognized that students' participation in helping with the school's snack programs offered an opportunity for developing leadership skills:

...it's sort of a leadership thing within the class, some kids are responsible on particular weeks for serving, some are checking off who is getting what and so it's all part of leadership...that you can bring into your class anyway, in that way it's a learning situation for the students....

A link between physical activity and healthy eating appeared to a be another natural connection for the teachers interviewed: *"...it did bring a lot of awareness about how important it*

is to be physically active ... in collaboration with your eating habits. " A teacher reported including opportunities for healthy eating and physical activity as an alternate reward system within the classroom:

> ...so today they were writing a test in health... they had time to finish it and we went to the gym for 15 minutes, an immediate reward because everyone in the class had a ..snack. Carrot sticks and kiwi and so it was a time of celebration and of course the reward is usually more exercise which the kids enjoy....

Another teacher felt that engaging in physical activity would support a greater interest in healthy eating. Some teachers expressed that the connection between healthy eating and physical activity remained an area for further integration within schools: "....I think the biggest thing I'd like to see is a connection between the phys ed and the eating and it's not really happened yet to my liking so it's something that I'd want to push for..".

> While the integration of healthy eating within school life was an issue at the school level, the policy working group appeared to remain more focused on the policy development process at hand. In retrospect, CK a guiding coalition member, reflected on the merits of integrating school nutrition policies with physical activity and other initiatives to leverage support and potentially, resources:

> ...I think we have done a good job of being able to manage competing interests and being able to keep this work profiled. I wish at times that we were able to better integrate it with those involved in active living for example...

> ...I hope that we can present [school nutrition policies] within ... the broader context and

so that the support mechanisms are there for this project and other projects of the Healthy

Eating Alliance and then again connect it back to our strategy for Healthy Living because

I think there's a good flow there in the linkages and how they tend to support each

other....

The document review revealed several instances where lead school representatives

suggested that strengthening the connection between school initiatives might be useful to reduce

the perceived burden of change. In response to this information, the policy working group

attempted to capitalize on additional opportunities to promote their message as reflected in the

following example actions described in meeting minutes:

- a meeting with the Active Healthy Schools Community Initiative was held to present the

  progress of the policy development project

- the policy working group partnered with Concerned Children's Advertisers (CCA) to

  publicize locally the launch of a new national campaign focusing on food and nutrition by

  CCA

- "..developing a more visible link with physical activity is quite important to this group as

  noted on the evaluation forms and perhaps more notably, during the meeting. We will

  need to consult with the Active Living Alliance..".

4.3.4 Support to Schools. Respondents commented that the development of school

nutrition policies was enabled through the support of several groups including: school staff,

parents, students, other schools, businesses, the Healthy Eating Alliance and others. As the

interviews revealed, this support often resulted in the acquisition of human, material and/or

financial resources. Leveraging such resources to support school change efforts can affect the success of the initiative on a number of levels. From a practical standpoint, Sarason (1996) suggested that the achievement of change initiatives was directly related to the resources that could be leveraged to support the initiative. The demonstration of resource acquisition might also be viewed by others as a reflection of the importance of the change effort and increase their confidence that the proposed change is feasible (Evans, 1996).

Teachers and other staff members assumed important roles in supporting schools as they experimented with changing the nutrition environment. Participants suggested that their support to the development of school nutrition policies developed along a continuum that began with common concern or interest followed by a resolve to commit to changing the school nutrition environment that ultimately led to action. Teachers reported a variety of reasons that motivated their voluntary participation in their school's nutrition team. Some teachers attributed their participation to their own personal interest in healthy eating: "...[it was mentioned] to me and I said 'sure' because it is something that I really am interested in, healthy eating I think it's so important..". Other teachers perceived their participation as a means to gain information that might benefit their family's welfare:

..I guess for me too as a parent...of 2 girls, I know that they're faced with many choices out there in terms of what they're going to eat and I thought well, if I can better educate myself then in turn I will do a better job in educating my own children, so my role as a parent would have been my other influence and because I've got kids in school.... I have more of a vested interest as to what they're eating,...

Teachers also cited a connection between unhealthy eating habits and the development of chronic

diseases such as diabetes as a rationale for teaching children healthy food choices:

> ...that's what they should be learning...that's crucial to where they are right now in development, if they don't start developing those healthy eating habits when are they gonna start? ..... the way they are talking age 30 and early 40s it's gonna be too late with heart disease and diabetes...

Similar to members of the principal group and the policy working group, teachers rationalized their participation as 'doing the right thing' for students even in the face of alternate opinions: "..I think we're doing the right thing but... I'm quite aware of other people that have feelings contrary to me that we're trying to do too much." This teacher further summarized her participation as focused on helping "the school be a healthier place".

Teachers described how a concern about the eating habits of their students propelled them to commit to supporting change in the school nutrition environment. In the words of one teacher: "..the hot dog thing was driving me crazy....Oh yeah, I had to act, to me it was negligent not to, so I had to act it was critical. It was just critical." Another teacher reflected on her experiences of overhearing colleagues express concern about their students' eating habits:

> I've been here 11 years and over that time you hear teachers continually bringing up the fact that some of our students are not eating very healthy, like they would notice lunches coming with a can of pop and a bag of chips and a chocolate bar, lunches get dropped off in the office ...we kind of thought, when the opportunity presents itself ...and then all of a sudden teachers were really concerned about what kids were eating..

Participants reflected that the ability to develop school nutrition policies and stimulate action at the school level depended on "....teachers' willingness to allow change to happen" and

"....it depends a lot on how committed the whole staff is too...". The comments of principals suggested that they were aware of the level of potential interest and commitment of their school staff to this initiative:

> I think for me [it] was the support... that I got when I volunteered the school as a lead school because of knowing some of the staff that were back there thinking the same as I was and it wasn't a case of having to educate them in order for this to happen, it was easy that they felt that way ...

> ....the team spirit the philosophy among the teachers is crucial. If...the great, great majority of the staff does not abide to the belief of being aware of better eating habits...I think that will make a big difference in the outcomes. It's like a team that does not play together - it's hard to win, it's hard to achieve a goal, because there is a lot of convincing to be done..

In lead schools supporting the development of school nutrition policies involved action on several levels including: researching and testing new food products and engaging food service providers in negotiations to explore options for healthier foods that could be served. Teachers and principals readily acknowledged the contributions of the other school staff members and their support in preparing healthy foods for students:

> ....our school secretary is busy enough but... she always pinch hits if we get stuck, or even our custodian, or our TAs will help out. It all gets done because it's being done in the best interests of the children...like yesterday the secretary and the custodian got the [baked potatoes] ready...

Principals also observed teachers actively modeling healthy eating choices for students to create a supportive nutrition environment:

> ...we certainly had a few staff just by way of their own lifestyles were very much into that type of thing so it was almost sort of an education and a modeling by way of the staff room and the staff eating and the education component of the health program. I think in a way it sort of lended ourselves to getting into this type of thing when it came our way.

One teacher described her actions to raise awareness of healthy eating issues by engaging parents and thereby increasing their awareness of the changes occurring within the school:

> I've had more conversations with parents surrounding it because since I'm interested now and I'm on this committee, you just talk more about, for example last night at parent teacher interviews I actually had nutrition conversations ... because that was something that they would bring up to me or I would bring up to them..

In summary, the concern felt by school staff regarding the eating habits of students enabled the development of elementary school nutrition policies by stimulating action at the school level to create supportive nutrition environments that were sustained by the ongoing commitment of staff members to the issue.

Parents also assume a variety of roles within schools and as community members in relation to change within schools. In a supportive role, parents may exert positive pressure on school administrators to address reform, model healthy eating habits at home, provide volunteer and other resources to schools to support change efforts and guide change initiatives as part of governance structures (Fullan, 1991). Alternately, parents may actively oppose school change

initiatives or ignore reform efforts if the change is perceived as having little consequence (Fullan, 1991).

Interview respondents emphasized the important role that parents played in supporting the development of school nutrition policies including: providing volunteer support to enable the school to purchase and prepare healthier foods and providing equipment. One principal described the central role of parents as:

> ...the most powerful ...to make a big, big difference are probably the parents because they are the ones who will have to act upon it, they are the ones who are making the lunch boxes and the lunches for school...

In developing school nutrition policies the initial and continuing support of parents towards the proposed changes provides an important base for school leaders to reference when the inevitable implementation challenges arise. In the example that follows, a principal described how their school determined parents' level of support for changes in the school nutrition environment:

> Last year ... we conducted basically a needs assessment survey with the parents involving any and all types of things going on in the school.... one of the things that we included in the survey was this whole area of changing ... our eating products to more healthier things, and price range ... that input from the parents was invaluable as far as us setting it up and I think about 89% of the parents were very much in support of changes in this area...

On a routine basis, participants suggested that the support of parents was also reflected by their level of participation in healthy food programs as volunteers: "well certainly the parents are

behind it...they're behind it both as volunteers and a lot of them send in product to our breakfast program." Interestingly, in one school the commitment of parents to the school food programs extended beyond their child's time as a student at the school as related by the principal:

> ....you've got some people who will volunteer from time to time because of their work and their situation they're not able to do it on a more regular business. We've had people that can't come in physically who will send food in for programs... We've had people who've had their kids go through the school that are still active in the school, their children have come and gone but ..we had a lady last year donate all the pancake mix and syrup for one of our pancake breakfasts...

School staff members tended to equate the contribution of food stuffs to support school nutrition programs as a barometer of parental support for the new directions in the school nutrition policies:

> ... the support came back, it's overwhelming, in our bulletin today that went out is thanking a whole lot of different people for their donations, so the parents are behind it, we're not at a loss for food to hand out... for the kids....

In another example, a key piece of equipment was donated by a parent to enhance the school's capacity to serve a wider variety of foods: "....one of the parents who had an electrical business at the time, donated a second ... oven to us.. that made a big difference in what we can do."

In this study, teachers and principals acknowledged that elementary school students also supported the development of school nutrition policies in several ways by: sharing their opinions, volunteering to assist in offering programs and by exhibiting a positive attitude towards healthy school nutrition environments. In one school, students were asked their opinions on school food

services in a survey to assist with planning the service. At the same school the principal noted the

importance of consulting students who would ultimately be choosing to participate in or opt out

of school food services and thus influence the extent to which new policy could be implemented:

> ....involving students...I like that, they're the big contributors to this and whether it's
>
> gonna go or not because of the age level... they're at the grass roots and they're being
>
> asked to make their input and... it's easier to develop policy because it's coming directly
>
> from the kids....when they can put their own spin on it as part of the policy you're more
>
> apt to see it go....

As demonstrated by Passmore and Harris (2005) in a study of student school action groups and

their effect on students' food choices, students can participate successfully in initiatives to

change their school nutrition environment.

Students were also recognized for their support as they assisted in the service and delivery

of foods "....some kids are responsible on particular weeks for serving, some are checking off

who is getting what.... ". Students also played a role in monitoring the rates of student

participation in food programs. One teacher also recognized the potential role of students to

influence household food choices: "...occasionally children can really steer the parents into

positive and healthy directions...". While another teacher reflected on the changing attitude of

some students towards foods: "..you hear kids telling other children, I've heard it myself:

'jumpins' that's not very healthy' and I mean in my day that would never be said, that was like

'cool, your mom packed you a chocolate bar'...".

Support that enables the development of school nutrition policies can also arise from

outside the school. As one example, companies that provide schools with a variety of healthy

foods at reasonable prices can develop arrangements with schools that are mutually beneficial for all parties. However, rural schools may be particularly challenged to create healthier school nutrition environments without the support of local food providers. One principal described the rapport that had been developed between the school and a local business: "...[food company], they donated the first bunch to get us going to see whether or not it would be popular and we've just yesterday made arrangements for a supply of those at a very reasonable price..". School staff noted that at times food service companies initiated services that helped to fulfill the school's nutrition policy requirements whereas in other cases initiative was required on the part of the school to lobby companies to create the product that was desired. One teacher described an experience where food providers accepted the challenge to offer lower fat choices and then went beyond the school's initial expectations: "...the providers ...they were more than happy to stop the ice cream and bring us other foods and [it was] their suggestion that they actually lower the fat in the milk ...".

Undertaking new policy initiatives in schools may require additional time from administration and teaching staff, the acceptance of new responsibilities and/or new accountabilities to ensure that policy is implemented. In this policy development process, providing information to support decision making, undertaking site visits, being responsive to requests to provide guidance on emerging nutrition issues of importance to schools and the developing a resource toolkit were documented as part of the activities of the School Healthy Eating Policy Working Group. Evaluation results from a networking meeting of lead schools provided evidence that respondents at the school level clearly valued this support from others and opportunities to offer support to each other, citing the most beneficial aspects of the meeting as:

"...sharing - schools tend to function in isolation - especially in fundamental school related issues" and discussing the best practices in other schools.

Members of the policy working group indicated that providing support to schools was a present demand and a future requirement to enable school nutrition policy development and implementation. As one member observed, the support requirements for each school differed and therefore a generic approach would likely not result in meaningful change:

> ...I think when you want people to make changes you've got to give them supports .... it's not just newsletters and tips for their school newsletters, it's not enough, it's a piece but it isn't something that they're gonna do on their own...

4.3.5 Reducing the uncertainty of change. Sharing information during the process of school change can serve several purposes by: building the credibility of the policy working group, broadening political support for the initiative and increasing the number of people aware that a change process is occurring (Anderson & Cox as cited in Horsley et al., 1990). Communicating the intended direction and process of the planned change may also serve to overcome resistance related to lack of understanding of the change process being proposed (Conner & Lake as cited in Razik & Swanson, 2000). Other authors have encouraged groups seeking to change schools to also consider the psychological dimensions of the proposed change including: threats to power status and belief systems; challenges to feelings of personal competency and fear of the unknown (Evans, 1996; Razik & Swanson, 2000). Attending to these challenges through sharing information that reduces the uncertainty of change can forge shared values and support the new norm created by the change (Kotter, 1996). Lack of early consultation with school personnel on matters of school nutrition policy change can result ultimately in

implementation failure of the finalized policies as described by McKenna (2003) in an analysis of the implementation of food and nutrition policies in New Brunswick schools.

Participants at lead schools indicated that their involvement in the process at an early stage and the information that they accessed as part of this involvement helped to reduce their level of discomfort with the potential changes that new policy would bring. The opportunity to take the lead on a new initiative proved to be appealing to some school staff:

...I knew it was a new project and I guess I had an interest in good nutrition in the first place. I wanted to be... in the forefront ... and going with it and try to help make decisions.....it's nice to be, kind of with the drivers, than actually hearing it a year later and kind of being said these [are] the decisions that are made and thinking well, I don't like those decisions...

...I know our school team is proud to have been involved and had some input into that on the ground level as opposed to being told later on what to do and ... I think by empowering us as lead schools it's an easy sell..

Other school staff appreciated the opportunity to participate in the process because access to early information on the project reduced their level of uncertainty about the proposed changes:

...when you're not totally involved in the project from the beginning obviously you're gonna wonder what it's about.... I mean everybody appreciates getting the opportunity to input and then as you see things coming at you, you're much more informed and you're much more able to deal with what you have to implement....

The document review described communication practices that were intended to reduce the uncertainty surrounding the proposed change by clearly articulating the direction of change,

expected process and implications to those stakeholder groups most directly involved. In this

process, the policy working group assumed responsibility for communications that enabled

policy development as illustrated by the following examples:

- In a memo and a Healthy Eating Alliance report in June 2003, the direction of change and the expected collaborative process was specifically and publicly positioned

- Documents explaining the policy for parents were developed in response to a requirement identified by a school district representative on the working group

- A school district representative described the project at a district meeting

- A communications protocol was developed and included a commitment to issue press releases to alert government departments of upcoming announcements

- A policy project update was presented at the PEI Teacher's Federation Annual Convention.

Through planned communications to reduce the uncertainty of change, policy development

information was shared not only with lead schools, government and parents but also with the

broader school system.

4.3.6 Weighing the cost/benefit of change. As Boyd (1989) critiqued, a deficit of many

educational policy analysis "....is a focus on the benefits of some policy with little or no

consideration of the associated costs" (p. 505). In this process of navigating change to a new

school nutrition environment, participants in lead schools tended to weigh the costs of the new

policy against its potential benefits. In the interviews with school participants, the costs of change

and potential losses figured prominently in their consideration of development of school nutrition policies. This awareness of the costs of change did not necessarily preclude further action but rather appeared to be part of the process of navigating change.

In some cases participants attempted to measure the benefits of one activity against the use of unhealthy foods. In one example, a principal attempted to balance the goal of fund raising for play ground equipment against the use of high profit chocolate bar sales: *"...I think the two goals that we're pursuing, healthy food and fund raising for our play ground equipment are both valid and sometimes you have to negotiate a bit... "*. At another school, a parent recounted a story of reduced participation in schools skating events when access to vending machines was restricted after the skate:

> ...one other lady said she had been talking to some parents from other schools that had done that and the participation rate of the kids going to the skate went down dramatically, so if you take that away you might lose on the other end. So if a kid goes skating for an hour and he gets a pop afterwards he's had an hour skating, so I guess a glass of Coke isn't gonna hurt him...

While principals described various strategies that they used to resolve these issues, their awareness of both the cost and benefit of change and the necessity of making decisions that balanced these issues appeared to help resolve problematic issues early in the policy development process. In one example, the issue of school chocolate bar sales, which generated a high profit margin for minimal effort, was addressed by principals who reflected on their decisions to sell and eventually discontinue sales of the bars:

> We dropped chocolate bar sales... a couple of years ago because we sat down with Home and School and we talked about some of the things we were doing here ....and said we are

kind of being hypocritical, we are asking the kids to make wise choices and then we're sending them door to door selling chocolate - so we haven't done a fund raiser for years.

....we did choose chocolate for 2 years and after that I said, well, I think we have to abide by our beliefs therefore the chocolate has gone out the window..... I told [our school parent committee] my decision but they certainly agreed with it and put it aside...

One principal weighed the costs and benefits of choosing to sell a high profit but less nutritious food (chocolate bars) against developing a resource that would support physical activity. Though ultimately in this instance, chocolate bar fund raising was initiated, the fact that this was a time limited fund raising event reflects the principal's underlying philosophy: "....as far as fund raising is concerned I have a belief that the minimum is the best, if none at all."

Another principal recognized that serving a more nutritious lunch choice could increase the cost to volunteer resources: "...we were having the discussion: would it be better for us to get into that - which... might require more volunteers, and you don't want to stretch it too far, you tax them. But it might require more help ....". As described in the next section, through a 'bottom up' policy development process, the policy working group gained additional ability to address the issues of the costs of developing school nutrition policies.

4.3.7 Bottom up policy development. Identifying the optimal process in developing school nutrition policies may be largely dependent on the context of policy development, including: stakeholder groups, place, timing relative to other political and social pressures exerted upon schools, and history of policy development. Boyd (1989) suggested that the selection of a bottom up approach to school change might enhance the degree of ownership in the proposed change and ultimately increase the likelihood of implementation. In this project the School Healthy Eating

Policy Working Group tested two approaches to engage with schools to initiating the work of

policy development. In one school district, the School Healthy Eating Policy Working Group

drafted a proposed process for developing nutrition policies and then sought the advice of all the

district's school principals to comment on the process prior to proceeding. In another district, a

few select principals, who were identified as potentially being receptive to developing nutrition

policies, were presented with the proposed policy process prior to introducing the topic at a

general meeting of all principals. In the latter example, further information and support was

garnered by the working group before addressing the larger principal community in the district.

Establishing first contact with receptive groups, presenting the process and then identifying

problem areas enabled the working group to gather useful feedback from those most familiar

with the current school environment and make necessary revisions to plans. As a result of

principal feedback, the working group was also able to identify the optimal time of year to

approach schools to participate in the policy development process thereby increasing the

likelihood that an invitation to join the project would be favorably received.

Contact with the PEI Home and School Federation was also established early in the

policy development process to solicit feedback from another key group that would be directly

affected by the policies. In another example of seeking to present the right process at the right

time, school district representatives to the School Healthy Eating Policy Working Group

provided strategic recommendations on the optimal audience and timing for the presentation of

draft policy language. Evidence from the documents reviewed suggested that the policy

development process was adapted during the course of the work in response to emerging

circumstances. The contrasting language used to describe the purpose of lead school networking meetings illustrated the different approaches taken by the project team in response to the participants' reactions. The minutes of one district's lead school meeting described the purpose of the meeting as ' developing nutrition policies' whereas in another district the purpose of the meeting was described as "..to help schools identify actions they could take to improve the eating behaviors of their students". Though the intent of both meetings was to work on the draft policy language, the choice to emphasize policy development in one case and to focus on the intended beneficial outcome of policies in the other instance demonstrated a sensitivity to differing district levels of motivation to participate in the project.

During participant interviews, the role of the school district representatives in the 'careful sheparding' of the process and their steps to create conditions that supported the work was acknowledged by other working group members who benefitted from these efforts: "..[HP] probably did a terrific job of just stick handling it through, in terms of picking the right schools and preparing the ground and navigating them through and knowing where the pit falls were .... ". The process of consultation with schools was also identified as an important step to identify the potentially problematic and widely supported aspects of the policy. :

...definitely use a grass roots approach.. I think that people are tired of ... the top down approach of policy development and that by using [a] grass roots approach you come up with something that's acceptable to all parties involved and that it is so important to involve all members of the school community.

I think the other thing that has brought it to where it is the approach that was taken that it

was a consultative process involved various sectors - health, education, school boards, community schools and the Home and Schools and by speaking to principals and parents and teachers through that process with the lead schools it built support from the ground up....

Though the consultative process was described as 'grass roots' and encompassing, one member of the policy working group queried the depth of consultation that had been achieved with parent stakeholders. The researcher's difficulties in identifying lead school parent representatives to interview for this study may support the idea of limited parent involvement during some phases of the policy development process:

...we say parents were involved in the development process ...yeah, maybe, we had six parents, for sure and we had... the vice president of the .... Home and School Federation but in terms of wide spread parent involvement, no we haven't....but they certainly have [had] their chances.

In general, through this policy development process, by engaging schools and parents the policy working gained more information that enhanced their understanding the cost and potential benefits of nutrition policy development. This understanding was then applied to support schools in the change process through initiative such as the *Healthy EatS Toolkit* which included specific sections that addressed fundraising alternatives to the use of unhealthy foods.

4.4 Barrier factors

Barriers to developing school nutrition policies, similarly to the enabling factors, may be influenced by the specific school context, historical factors, process of policy development, individuals involved in leading the change process and other factors. Basom and Crandall (as cited in Rasik & Swanson, 2000) identified common barriers specific to change in schools:

...(1) discontinuity of leadership, (2) managers' fear that change was unmanageable, (3) lack of training in management regarding change, (4) following a top-down model of decision making, (5) socialization and conditioning of school staff which leads to the belief that the system is not the problem, (6) unresolved competing visions of what schools should be and (7) inadequate time and resources (p. 319-320).

In this process, as the next section details, resource limitations, specifically financial, human and time resources were identified as potential barriers to the development of school nutrition policies. School personnel in particular described how a lack of funding necessitated their commitment to fund raising efforts to support programs and acquire resources. While some readers may be challenged by this notion of food as a tool to acquire other resources, without acknowledging the implications inherent in any loss of revenue to a school, the impact of changes to the school nutrition environment cannot be fully appreciated. Competing issues and initiatives in schools, at the government level and within the policy working group also acted as potential barriers distracting from the development of school nutrition policies. Finally, teachers in lead schools identified that the routine use of food as a reward in the classroom was a practical barrier to change in the school environment.

4.4.1 Resource Limitations. Fund-raising to support both routine and special expenses incurred by schools has become a social norm that is accepted by the general public but rarely acknowledged as an expectation. In focus groups with school food service directors in the United States, funding issues and challenges in changing food based school fundraising were cited as major barriers to the development and implementation of wellness policies that included a school nutrition component (McDonnell, Probart & Weirich, 2006). In Canada, rearrangements in federal funding transfers to cover health and education expenses during the 1990s reduced

overall funding to the provinces by over $5 billion (Davidson-Harden & Marjhanovich, 2004).

As a consequence, communities have faced increasing pressure to raise more money to cover

basic costs incurred by schools (such as: classroom supplies, library books) and 'extras' (such as

school trips, sports, arts and music) (People for Education, 2005). Kidder (2002) reported that in

2002 Ontario elementary and secondary schools raised approximately $48 million to support

their schools while in British Columbia parents fund raised approximately $30 million per year.

Though this obvious degree of community support for schools is impressive, concern has been

expressed about emerging imbalances in communities' capacity to fund raise to support schools,

over reliance on communities to cover the basic costs of public schools, distraction of students

and teachers through involvement in fund raising and the commercialization of schools (Henry

& Garcia, 2004; Kidder, 2002; People for Education, 2005).

During the course of the interviews, school representatives described the various

programs and resources that were acquired through fund-raising and the prominent role that food

based fund-raisers played in contributing to the overall resource base of schools:

> That's what it's all about, schools serve food, provide food, as a convenience to parents...
>
> but also the money that raises is really important to the school. They use that to support
>
> their programs, buy books... bring in speakers.. have kids do special projects that require
>
> resources...where you're taking kids on an outing all those cost money... But the schools
>
> are underfunded and they have and will be, so this is one way that schools make up for
>
> that so that's where the lunch time food comes in, then fund-raising campaigns you can
>
> quickly raise another important source of dollars...
>
> Principals in particular were keenly aware of the broader impact of reduced financial

resources. A principal explained how reduced revenue from food sales had affected their ability

to approve teacher requests for additional resources:

> In the past... very seldom teachers ever got the 'no' word from me if they came looking
>
> for extra resources for their class or a conference that they could attend, there's always a
>
> way to work around and say 'yes, we'll find the money somewhere'. I've said it many
>
> times this year - that we're not able to do that ....

At other schools loss of revenue from the sales of healthier foods was also projected to impact on

students' ability to access other food programs, such as the breakfast program:

> We did a tally of our original food program, lunch programs, meal time programs and
>
> they were generating about $8 - 10,000/year in profit and so I said when you go to a more
>
> nutritious, healthier food item then .... if it's a higher [price] than before it's gonna drop
>
> off the number of kids that are consuming it and so that's basically is the crux of
>
> situation...

As illustrated in the example cited, food based fund-raising supports many activities and

programs in schools but the demand for ready cash can necessitate the sale of high profit, low

administrative cost foods in these campaigns: *"...we did a few fund raisers and we did choose*

chocolate because I had 35 students and we had thousands of dollars to fund raise, so what could

we put on the market out there that could sell and increase our chances?...So we did choose

chocolate for 2 years ...".

Attempting to change the school nutrition environment required extra effort on the part of

school leaders to consider alternate ways and sources of funding as described by the principal of

a lead school : *"...Where you're doing it? Is there a better way to do it? Is there a better product*

..really take a hard look at what you're doing, what you're selling, when ?". The necessity of

carefully considering fund-raising is further underscored by the competitive fund-raising environment that exists in many communities. Categorized by one participant as "ferocious", many charities and groups are seeking limited public dollars to support worthwhile causes throughout the year resulting in competition between schools and charities and between schools jockeying for fund-raising territory:

> Well, there's also this dynamic and this is a lack of communication on the higher levels of the hierarchy... with regards to who can sell what, when. For example, magazine drives are very high profit but if you are aware as a principal that a neighboring school has a certain time of year that they always do this particular fund raiser then you won't touch it because you're not going to get into their territory...

In the interviews, participants critically questioned several assumptions on fund-raising in schools. One teacher questioned the overall alignment of fund-raising within the business of schools: *"...that's not our business you know, we are in the business of education, we're not in the business of becoming a money mill, we're not supposed to be"*. Others questioned the assumptions underlying the choices made in fund-raising: *"...there's also the attitude that unhealthy foods need to be served in order to create a profit so that other activities within the school can go ahead"* and on a larger scale, the systems that led to funding of schools: *"...maybe we need to look at how our schools are funded. So should they actually have to fund raise to purchase books for the library? Or support extracurricular activities? I'm not sure."*

While respondents had no immediate solutions to their concerns on resource limitations, most were clear that a failure to consider how proposed school nutrition policies might affect fund-raising efforts would be a potentially powerful barrier against acceptance and eventual implementation of the new policies:

...[fund raising] certainly has been an important consideration to take into account because if that's not addressed then that becomes in fact ... a significant barrier to moving ahead with [policies].... you find people who are wedded to making money by selling hot dogs to children...and you certainly get a great deal of resistance....

School representatives were very aware of the changes that other schools had made in their fund-raising activities and the outcomes of these changes:

They have gone way out there and stopped selling their hot dogs, but they have gone thousands of dollars out on a limb because of this and I'm very, very impressed with this...

I regret the financial losses to those departments, you'd like to see each of those departments have an annual budget that would see their program grow and would see their goals met and I think..as a direct result of food program changes that we've suffered pretty significant losses ...I'm talking like losses of upwards to 50% ...

In the document review a district ad-hoc committee on school nutrition reiterated the concern that: " ..the challenge of changing the way schools do fund raising was noted, with particular concern for the challenge of replacing revenue that may be lost as a result of [policy] changes". This revenue from fund raising, which was often invested to support other school activities had become an essential feature of school budgeting therefore any policy direction that might result in a reduction of this revenue would potentially be viewed as unfavorable. A school district representative in the policy working group summarized the implications of the change in food based fund raising in schools as a challenge that would require ongoing attention during the implementation of the new policies:

... that's the main role nutrition plays in fund raising..it's the most effective fund-raising we have and we've become dependent on it...and we have to change what we sell, that's the hard part... it's one thing to say 'okay, you know we're gonna sell really nutritious food and the kids may not buy as much of it... but it's still an important thing to do and at this school we're gonna lose $4000 over the course of the year because of this, that $4000 though pays for the athletic program..or it pays for the cross country running in an elementary school or it pays for the intermural program or it pays for the activity program so you're saying 'ok, we're gonna be healthier here, but it's gonna hurt us here' that's the dilemma that schools have with it and nobody's against it but 'okay, how do I do it?'...

Resource limitations were also experienced as barriers to the development of school nutrition policies in other ways. The development of elementary school nutrition policies required time and human resources to support the initiative. As a non-renewable resource, a lack of time was cited as a barrier to the lead schools' nutrition team activities:

Time is always a problem... even if we had.. time to meet once a month for a nutrition meeting right here at the school level, I mean we can't. You can't initiate anything if you don't have the time to prepare it and you're always pushed to shove when it comes [to] time.. so to me it is like everything else, if you had the time to do it you would probably put more effort into it...

The policy working group members were also aware of time as a resource limitation. In their case, the work of policy development was associated with professional and personal costs because they were adding the activities to support policy development to their present workload. As members reflected on the choices that they had made to support this project they shared their concerns around the costs to other areas of their work and family life :

...a lot of this stuff has been an add on to my job and much like [DO] you feel guilty

sometimes, yeah, 'oh I haven't gotten to this cause I've been putting so much time into

this'...

...I think what I've really learned is that stick-with-it-ness and energy and passion gets

you what you want, and I've also learned that there is a cost, it's been hard on my

family... I was doing my job at night in order to make up for all the time I was tied up

with Healthy Eating Alliance during the day and there were certainly lots of weeks where

I was putting in at least 20 hours per week on the Healthy Eating Alliance...

The activities of the paid coordinator served to support the volunteer members of the

policy working group thereby reducing the demand on the members of this group and

maintaining forward momentum during the course of the project and assisted schools. This

support though was tempered by the uncertainty of the sustainability of this funding throughout

the policy development process. As a reflection of this uncertainty, the document review revealed

a pattern of regular attention, at meetings of the policy working group, to the issue of identifying

funding sources to support the work of policy development while balancing requirements from

the primary funder to expand the work of the project.

The cost of changing to healthier foods was another concern identified by participants:

"..I don't think you'll see in the case of many principals, many teachers, many parents that say

'we don't want to eat more healthy' all we want to do is to able to eat more healthy but not cost

too much more... ". Lead school representatives viewed the higher cost of healthier foods and the

challenges this presented to schools' requirement for cost containment to be a barrier to the

development of nutrition policies that emphasized the use of these foods. This was evident as

schools weighed the decision to bring healthier food choices to school meal service while attempting to maintain the cost to students within an acceptable range :

> ...we did look at the [low fat] hot dog, talked to the kids about it, and didn't think they'd eat the white hot dog and the cost - it was more expensive. Now a bigger school might be able to absorb that cost but we're only a school with 72 kids so we didn't want to put the price of food out of range for kids. We wanted to keep it reasonable...

> ... to try to go healthier .. the cost is more and there was one [provider] they offered to make fish and bake it, not deep fry it .... and there were 3 little pieces for a couple of bucks and I thought ... the child is not going to be filled with 3 little pieces and $2 is a lot of money for some of these kids...

The cost of foods offered for sale to students was also a concern for school staff even in subsidized programs. One example cited by respondents was the milk program where school representatives suspected that sales of milk products would increase if pricing could be further reduced for all products: "...right now the white milk is subsidized so the kids pay $ .35, where the chocolate milk is not so they're paying $.60, that would be nice to see if they subsidized the chocolate as well and see more children drinking it because $.60 a day is a lot of money for some kids."

Special occasions where food was served at school was another issue that respondents identified as presenting extra costs for schools: "...we made a go at having class parties that were all healthy food choices ... and the kids loved it. It is more expensive though if you're gonna buy....things that are better choices, it's just gonna cost more money. " As summarized by one teacher, the cost of healthy foods is a real barrier for schools that wish to offer healthier choices but do not have the available funds to absorb the extra costs of these foods:

...it always, it costs more to eat healthier period ... and that's the reality so.. if we didn't have to worry, if we were a funded school and we had 'x' amount of capital dollars for our nutrition programs, well we'd all be smiling, we'd be bringing in the fruit of the month or the fruit of the week.

4.4.2 Competing issues. Competing issues and initiatives were generally identified as barrier factors to the development of school nutrition policies. Participants identified that these competing issues arose at three levels: in schools, at the provincial government level and within the policy working group.

At the school level, participants observed a number of competing issues being presented at district principal meetings: *"...the initial presentation to the... board of principals ... wasn't received well at the principals' meeting at the beginning of the school year and it was one more thing..."* and from another member of the policy working group: *"...all throughout the morning there was one thing after another that the principals were being told they had to do... ".* One respondent surmised that other more urgent issues in schools in one region may have been a barrier to the development of nutrition policies in that district:

> ...I know they've had other things on their minds, this whole issue around the bullying problem that they appeared to have [in the region]...their minds may have been on more pressing things. Another factor may have been that they're already active in this area and were already developing policies and doing things therefore they may not have felt the same urgency for action, this may have been seen as supplementary rather than ground breaking...

The document review confirmed several external competing change initiatives that schools faced during this process as noted in the minutes of meetings:

- concern over "duplication of work that will come with multiple committees in the same school"

- concern expressed by a school district representative about a research project in schools that was characterized as "massive, labor intensive" for the school district

- school teams are becoming a pain, there are too many [requirements to form school teams] being dropped on [principals]

These concerns, the majority being expressed by school district representatives, offered insight into the numerous demands placed upon schools.

Within the provincial government, respondents identified that other more acute health issues commanded the time, attention and financial resources of government funders that could otherwise be committed to nutrition policy development in schools:

...I think other .. potential competing interests - our concern over ensuring that our acute care system is adequately supported or funded... health promotion and prevention is always in competition with the acute sector...

School nutrition policies were developed during a period of structural change for the government of Prince Edward Island. As the primary funding agency for this project, these changes and the accompanying uncertainty surrounding the priorities of the restructured Department of Health relative to the development of school nutrition policies represented a significant competing change that claimed the attention of the School Healthy Eating Policy Working Group.

At the policy working group level, several issues were also brought forward for internal consideration including: the potential to support kindergartens in developing nutrition policies;

interventions to increase access to the school milk program in one district and the opportunity to broaden the project to include intermediate and high schools prior to adoption and implementation of the policies at the elementary level. Undertaking any of these activities would have required time and resource support that potentially could have distracted the working group from its initial objective.

4.4.3 Food as reward. Razik and Swanson (2000) acknowledge the power of preexisting norms and values in schools to create resistance to any change that threatens these practices that have become integrated into the routine of school life. In this study, teachers identified that food was routinely used in their schools as an inexpensive treat or prize and they speculated on their ability to implement a policy that might challenge this school norm. The use of food as a reward is not an uncommon practice, as described in a survey of school nutrition environments by Rainville and colleagues (2005) where 55% of respondents reported the use of food as a reward. As described by Birch and Fisher (1998) though, the use of food as a reward for performing tasks is associated with increased preference for the reward food. When this food is a less healthy choice, this can create a mismatch between lessons in the curriculum that instruct children to choose healthy foods and modeled behavior in the classroom. One teacher described her colleagues' discussions about the topic: "...there's a lot of talk at staff at whether treats should be used as prizes..." and shared her philosophy on the subject: "...personally I think moderation is what you have to look at but ... from my understanding of the policy .. it's a 'no no' to offer food as a reward... ". Another teacher identified this aspect of the draft policy as potentially exerting the largest impact on her current classroom practices:

..another thing that's really changed me... is trying not to treat the kids with candy. I

didn't do that a lot, but once in awhile we would have a concert ... and I'd bring in

Timbits, that would be big, because neither of my little schools are in a community where

they have a fast food place... I've started to try to think of other ways. ..

As a potential barrier factor in nutrition policy development, this issue suggests that

policy makers should be alert to the practical aspects of implementing policies within schools

and seek to offset these issues by working with teachers and principals to identify alternate

reward systems.

4.5 Enabling and barrier factors

Two factors that influenced the policy development process appeared to exist as both

potentially enabling or barriers. External pressures on schools and available foods varied in the

extent to which they enabled policy development or challenged it throughout the course of the

process.

4.5.1 Pressure. Participants suggested that the pressure to change and conversely, the pressure

to maintain current practices in school nutrition were experienced in several ways. In one

example, a participant reflected on his observations of the implementation of school nutrition

policies in another jurisdiction. In this instance, the lack of pressure from decision makers and

counter-pressure from the schools to maintain revenue sources may have led to the resultant

implementation experience:

...it was probably decided in the back of people's heads that we're not fighting with

schools over this one and I know that's what happened in New Brunswick they had a

provincial policy and schools had a hard time implementing it and for the same reason -

loss of revenue and the school boards hadn't really decided they were gonna fight with

their schools over it and it didn't get pushed by their Ministry of Education...it wasn't a

good prospect of winning for anybody...

The application of a degree of positive pressure within and external to the school system may be required to ensure that school nutrition policies are developed and subsequently implemented for without this pressure strong barrier factors may overtake initial progress.

Levin (as cited in Fullan, 1991, p. 117) identified three broad ways in which pressures to stimulate educational policy change might arise: natural disasters, external forces imported into a particular context or internal contradictions such as changing societal needs. In the case of this policy development process, the pressure to develop school nutrition policies appeared to arise in response to an internal contradiction between the documented increases in obesity in Island children combined with unhealthy eating habits of children and the schools' role in teaching, offering, and modeling healthy food choices. Respondents identified that parents' concern and schools' readiness for change created a climate of positive pressure that enabled the development of school nutrition policies:

> ....I think parents are becoming more worried about it themselves so that there's a
> growing sort of awareness of the problem and a readiness to deal with it on the parts of
> both parents and ... school systems so I think ... the climate was building, the evidence
> was provided....

A school district representative also commented on the importance of the timing of the proposed change in relation to society's readiness to deal with nutrition and health: "..I think the timing [is] perfect .. it's become a big issue in society - what we eat and our general health.. ". From the perspective of one participant, a growing public interest in the health of children was also leveraging political and administrative support to take action: "I think politicians are responding to the public pressure to do something, when we met with [a school principal] last week he was

talking about his parents complaining about the fries and stuff like that... ". A teacher also linked

public interest in the availability of healthy food choices to increasing pressure on corporations to

offer healthier choices: "I think there's public will to ensure that good food is available and I

think when there is a public will, that will drive the whole consumer wheel and force producers

to make good product and safe product".

Generally the media was perceived by respondents as being a source of enabling pressure

that provided public information and awareness to stimulate the development of school nutrition

policies:

..I think some of the media examples around healthy eating were really important... I

think the great media coverage of .... the study of PEI eating habits and ... the fact that it

got national coverage that was about a week long media cycle on PEI, it just kept

pounding the message that we gotta do something and we've had great cooperation from

people in the news media I think they are hugely important...

Public pressures were not always enabling factors in school nutrition policy development

though. As observed by Fullan (1991) "...the forces reinforcing the status quo are systematic.."

(p. xiii) and therefore not necessarily easily amenable to change. Participants identified parents

and school staff members as two main groups that held opinions and exerted pressure to act as

barriers against the development of school nutrition policies. As principals described, the

expectation of parents that schools offer lunch programs that students would choose to access

resulted in pressure to discontinue some less popular but healthier foods, such as a lower fat hot

dog product. In another instance, a principal suggested that parents expected that their children

would be offered the food of their taste preference regardless of nutritional content:

...some of the better food choices weren't getting the big thumbs up and weren't getting purchased... but yet you'd see maybe stuff in lunches that would be questionable compared to what we were offering which would be a higher price so obviously what that would suggest is that there's a bit of a decision there to say, 'it's ok Tommy or Jane you don't have to eat this healthier product, we'll buy you this'...

In another case, a principal from a lead school met with overt resistance when he attempted to discontinue a higher fat menu item:

...the leader in one of our lead schools has moved to another school which wasn't a lead school and that school changed what they served for lunch and his biggest conflict with parents... is chicken nuggets, take those out and the parents won't like it..

A principal described efforts to negotiate a modification to the norms associated with a school trip at a Home and School meeting. Though the results of these negotiations did not change the outcome of the event, the open debate on the benefits and disadvantages of change may have resulted in a greater understanding of the issue from multiple perspectives:

....we had a good discussion at Home and School, what would the reaction be if I told the rink to keep the canteen closed? Because they're in there and they're buying a pop or they're buying french fries that have gravy on them and that sort of stuff .....what would the reaction be? And we had a good discussion, at the end of the day we said 'we'll leave it open'. As one parent put it, 'if you're always on their case about it you're gonna turn them off on it, give them the exposure, educate them, but don't take it away ...

One teacher proposed that the pressure to maintain the status quo school nutrition environment might also be rooted in general public resistance to changing eating habits and an assumption that healthier foods would be more costly:

And culture is a barrier too and what I mean by that is until ...people really embrace the whole nutritional idea you always have culture to compete with ... it's still not necessarily'we want our children eating healthy', it's what we can afford to feed them, you know, it's cost...

Pressure to maintain the status quo school nutrition environment and food based fund-raising practices to support programs also arose from school staff members as observed by their colleagues:

....there are other schools and there are other staff within schools that maybe say: 'look I've got this basketball team, I've got this band, and if I don't make $5,000 profit on bar sales, we're not gonna...' so there, that's going to be a problem.

One exception to the positive pressure for change created by news media was cited by a teacher who described student confusion caused by a news story that erroneously suggested that the draft elementary school nutrition policies would require teachers to check lunches: "...after Christmas [some students] came back and said: 'I heard on the news ... that teachers are going to be checking our lunches and seeing what we bring to school' and another student said 'I heard that too'... ". In this case, action was required by the teacher and the School Healthy Eating Policy Working Group to supply additional information to correct public misconceptions.

4.5.2 Available foods. The second factor identified as both potentially enabling and challenging to the development of a healthy school nutrition environment was the food available at school, either for sale or free of charge. As described by Wechsler and colleagues (2001), when less nutritious foods are provided for children to eat, the presence of these choices creates a competitive environment with more nutritious foods. The provision of food at school may be a particularly important strategy for creating a physical environment that supports healthy food

choices as the norm (Kubik et al., 2003). Cullen and Zakeri (2004) documented the importance of available foods in their study of fourth and fifth grade students who consumed fewer servings of fruit, vegetable and milk when they transitioned to a school environment that featured snack shops. Similarly, in the present study, lead school members recalled the degree to which the availability of potato chips for purchase at school had negatively influenced children's food choices:

> ..I know years ago when I was working in another school they had a chip program and it was every noon hour and... there was no limit and I saw kids come down after throwing their whole lunch in the garbage can go down and buy 5 bags of chips and that's what they ate....

Whereas in another school a principal described how changes to the school's drink vending machine had positively influenced children's milk consumption:

> ... the only vending machine we have is a juice machine and the only thing we stock in it is water and fruit juice....everyday we have access to milk, our milk sales have... at least doubled, if not tripled since we did away with the Fruitopas and all that other stuff...
>
> School representatives appeared to wish to strike a balance with the foods available at

their schools, between increasing the availability of healthy food choices while at the same time maintaining treat foods for children. Cline and White (2000) suggested that the effect of this 'compromising' may inadvertently create an environment that contradicts other lessons taught in the classroom. This desire to strike a practical balance between offering healthy and less healthy foods may reflect the complexity of attempting to develop school policies that guide action in a culture where food is ascribed many meanings beyond that of consumption to foster health:

... hot dogs [are] not necessarily a bad thing because outside we do a barbeque... and it's a summer activity so we choose items like a tray of vegetables on a table and a dip is part of it too. So you see, we do a bit of compromising there but yet we don't step away from our beliefs. We make exceptions because the kids like it....

Participants from urban and rural areas reported facing different pressures in their efforts to change the school nutrition environment. In this study, schools situated in urban areas tended to experience greater competitive pressures from external sources such as fast food restaurants that offer many high calorie, high fat foods at prices that even young consumers can afford. Neumark- Sztainer and colleagues (2005) reported that students of schools that had closed campus policies that restricted students' travel from school grounds for lunch made fewer purchases from convenience stores and fast food restaurants. As summarized by one teacher, schools in rural areas may face less pressure from fast food establishments but they may also be situated in a less competitive provider environment which limits the choice of healthy foods available : *"...being a small rural area, we don't have a great amount of choice in terms of our providers and resources."*. Limited choice of food service providers in rural areas was not universally described as a barrier factor to healthy eating in schools however, as recounted by a rural school principal who described his successful experience in working with a local provider who was able to customize the choices offered to the school and offer an increasing number of healthy foods. Rural location was also viewed as advantageous by a principal who reflected on his concern for students who would be leaving a rural elementary school with a commitment to offering healthy foods to go to an urban school. In this case the principal was concerned by the new food choices that students would face: *".. the majority of our students go to [junior high] this year .. it's an urban area so you have your Pizza Delights, your Grecos, your Wendy's, your*

MacDonald's and all those other places and the temptation is maybe there..".

School staff recounted a number of observations of foods at school, in this case originating from the home, and their concern about the quality of these foods: "...I called up a parent one day whose child last year just took Joe Louis everyday or 2 or 3 different Vachon cakes... " and in another instance "...a lunch getting dropped off at the office with a bag of chips... ". Respondents explained that these lunches were sometimes the result of time pressures in busy households:

> ...one of my grade 7 students the other day, I was in the class before they came up from music and ...his father didn't have an opportunity to make a lunch so he dropped off a bottle of pop and a half moon [cake] so the boy set it on his desk when he went to music, when he came up - couldn't find it and I gave it to him eventually but I said,'where's your nutritious lunch?' .. and this was in private, he said... 'there wasn't anything in the fridge, there was no groceries Dad's gone shopping and this is just a snack so I don't go hungry and I don't usually eat like this'...

The identification of parental provision of food at school as a potential barrier to the development of school nutrition policies highlights the importance of socio-cultural factors including peer and teacher modeling of food choice and its influence on children's food habits (Bordi et al, 2003).

Chapter 5

Summary and Conclusions

5.0 Summary of enabling and barrier factors

As demonstrated in this study, the development of school nutrition policies can be stimulated by the need to address important children's health issues in a practical and influential social context. From a practical standpoint, the majority of children spend many hours at school and are offered foods while at school as part of nutrition programs, social occasions and sometimes as reward. Schools also represent an influential social context as teachers and peers role model food choice behavior, social norms and educate children on lifestyle choices. To better understand the development of school nutrition policies on Prince Edward Island, in this study interviews involved individuals from three groups: the School Healthy Eating Policy Working Group, principals and teachers. Therefore, the identified enabling and barrier factors in developing school nutrition policies represent the roles and perspectives of these groups in relation to the process. The policy working group was an enabling entity in the policy development process that led and championed the work by bridging the gap between the 'school world' (what was practical and possible in schools) and the 'nutrition world' (what was desirable according to nutrition recommendations). The members of the policy working group drew upon their common philosophical ground to build a case for change that could be communicated to schools to stimulate interest in the school nutrition environment. The working group further enabled policy development by learning more about schools to create a 'bottom up' policy development process that would engage administrators, principals, teachers, parents and other stakeholders at an optimal time.

As a policy enabling agent, the principal was recognized as an important school leader.

The personal philosophy of the principal was identified as a factor that could favorably influence leadership decisions and actions to support the development and ultimate implementation of school nutrition policies. Teachers and other school staff members also enabled policy development by supporting the principal's decision to change the school nutrition environment through their actions in the classroom. Other groups that were also recognized for their roles in supporting schools in the development of school nutrition policies included: parents, students, other schools, businesses, and the Healthy Eating Alliance. This support to schools resulted in schools' acquisition of human, material and/or financial resources that enhanced what was possible for schools to undertake.

In reflecting on their experiences, the participants identified a series of enabling steps that were designed to navigate the change process. Initial steps involved preparing stakeholders in the school system (district administrators, principals, parents and teachers) by providing research information on the nutritional status of Island children. Pilot or 'lead' schools then became engaged in testing proposed changes to the school nutrition environment and weighing the costs and benefits of the changes that they were experimenting with. Support that the schools received from a variety of individuals and groups was highlighted as a factor that eased the burden associated with the proposed policy. Finally, efforts to connect healthy eating to other aspects of school life and other curriculum areas were also identified by school staff as useful steps to navigate change.

Though many enabling conditions to support the development of school nutrition policies could be identified, participants also recognized powerful barriers that challenged the process. Respondents explained that a lack of funding to support school programs, events and/or resource materials was the main rationale to explain the sale of high profit, low nutritional value foods.

Despite philosophical views that appeared to be at odds with the sale of these foods, participants identified the potential loss of revenue associated with school nutrition policies as a serious concern with immediate and long term consequences for schools. This problem was further intensified for participants as they considered the increased cost of healthier foods that might be added to the school budget. Other issues, such as bullying problems in schools, competed for the time and energy of school personnel that could be applied to the development of school nutrition policies. Finally, teachers noted that their common practice of using food as an reward system in the classroom was an additional barrier that challenged the development of nutrition policies.

5.1 Limitations of research

Several limitations exist in the current study, one being lack of data from some stakeholder groups. Though parents and school board decision makers were approached to participate in this study, participant consent could not be secured. There may be several possible explanations for this: despite offers of a telephone interview and/or convenient location for the interview parents may have been overtaxed by other commitments and unable to participate; lack of interest in research participation; lack of incentive or other reasons known only to non-participants. Lack of information on the perspectives of students may also be perceived to be a limitation of this study but elementary school students did not play a central role in this policy development process therefore their participation in the study was not sought.

An additional limitation of this study may be the choice to use lead school staff members as key informants. Though lead schools were most involved in the policy development process it is uncertain whether staff in non-lead schools would share similar perspectives and identify similar enabling and barrier factors to the development of school nutrition policies. It could be asserted that those most involved in the policy development process may have held overly

positive perspectives that favored the development of school nutrition polices though the triangulation of barrier factors may serve to counter this argument. Finally, the researcher's position as a member of the School Healthy Eating Policy Working Group could be argued to be favorably biasing the author towards the importance of the role played by the working group in policy development. In this instance the accounts provided by participants external to this group which emphasized the importance of the policy working group's support in the process may serve as evidence to refute this argument.

5.2 Implications

Increasing rates of chronic disease in Canada have focused the public attention on the health of children. Researchers, public health agencies, government and school administrations have identified schools as an environment of interest in which to take action to improve the health of children through education programs, special events, physical activity initiatives and healthy eating programs. On a positive note, as a result of this interest, schools are faced with an ever expanding menu of possible activities to choose from in order to enhance the health of children in the school environment. These programs may offer schools a variety of choices from which to select initiatives that best meet the needs of their students and reflect local community values. On a more cautionary note, schools may face escalating and unrelenting pressures from external forces to pack more programs into an already full school day. A lack of coordination in managing the multiple 'opportunities' presented by external groups may further challenge principals and teachers as they struggle to create healthy school environments.

Efforts to improve the school nutrition environment may serve as a practical way to address several pressing issues at a population level when new initiatives can be integrated with existing school programs. As suggested by respondents, healthy eating can be integrated within

the norms of school life and throughout the curriculum. Students who have access to healthy foods at school may fulfill a substantial proportion of their daily nutritional needs, gain exposure to new foods and be favorably influenced as they observe other students and role models choosing healthy foods. Early, repetitive messages and modeling in a school environment that supports healthy food choices may compliment other public health initiatives designed to improve the health of children.

The results of this study reflect the experiences of Prince Edward Island elementary and consolidated lead schools and a School Healthy Eating Policy Working Group as they undertook the process of drafting school nutrition policies, therefore the findings are specific to these contexts. Though these findings would naturally differ if this policy development process were attempted a
year earlier, a year later or with children in different grade levels, some practical lessons from this work may be generalized. As an example, the recognition of the role of principals and teachers as policy enablers could apply to many school policy issues, therefore the collective wisdom of these groups should be accessed during the development of policies that impact school life. In this project, school staff members made valuable recommendations that enhanced the policy drafts developed by the School Healthy Eating Policy Working Group. School members also acted as local champions within the school districts testing and modeling new school nutrition environments. Finally, school staff members acted as internal champions within their schools through their individual and collective actions to support healthy eating. This policy development process, using pilot or 'lead' schools, might be useful in other cases to develop new policies while achieving support at the school level.

The findings of this study suggest that the role and composition of policy development

working groups or 'guiding coalitions' should be carefully considered when undertaking policy development processes. Rather than the random assignment of people to policy development, there may be benefit in accessing individuals with specific expertise and also those representing broader stakeholder groups to support this work so that the perspectives of schools and those with the expertise in the policy issue are represented. As illustrated by this project, both leaders and champions within guiding coalitions are required in the long term to sustain momentum around policy development in schools. The participation of both leaders and champions may be better sustained though with the commitment of financial and human resources to support the work of guiding coalitions who undertake school policy development. Enabling steps that assist groups to navigate change may also be applicable to other policy development processes within and external to schools. Creating a case for change, taking small action steps within realistic time frames, engaging stakeholders in order to reduce the uncertainty of change and linking the new reality to existing practices were all identified as beneficial activities that enabled policy development.

The barrier factors identified in this process of school nutrition policy development may have implications on a broader societal level. If the main barriers to improving school nutrition environments center around the consequences of lost revenue for schools then several broader questions may arise:

- What does society consider to be 'the business of schools'?

- What are society's expectations for the curriculum and other programs offered by schools? Are these expectations being met?

- Does society feel that schools are adequately funded?

- If schools are not considered to be adequately funded then who is responsible for

increasing funding? (Local community/provincial government/federal government?)

• Should schools be expected to raise funds? Should children be expected to participate in fund-raising?

These questions are not easily answered as they require an examination of community and social values coupled with an understanding of resources that are available at multiple levels (locally, district, provincially and federally). Financial and jurisdictional arrangements between provinces and the federal government of a historical nature may no longer be practical or reflect community values. It may also be challenging to address resource limitations from jurisdiction to jurisdiction with a "one size fits all solution" to address inequity. A further barrier to examining these issues is the ongoing ebb and flow of competing crises that arise on national, provincial and local levels. While there are no easy answers to address these complex issues, it remains important to continue to make explicit these and other barriers to nutrition policy development in schools as a step towards efforts to address them.

5.3 Future research

One challenge during the course of the participant interviews was to maintain focus on the policy development process without delving into policy implementation issues. Participants were keenly interested and attuned to upcoming issues that could arise as the policies were implemented so a natural area for future research is the implementation of nutrition policies in elementary and consolidated schools on Prince Edward Island. In the short term, research will be required to identify the extent to which school nutrition policies are implemented and enabling and barrier factors to policy implementation. In the long term, the impact on Island school children's health, specifically changes in food choices and weight status should be examined through follow up survey research and physical measures. Future research of school nutrition

policy implementation in elementary and consolidated schools on Prince Edward Island should investigate the attitudes and perspectives of both lead and non-lead school principals, teachers, students and parents during the implementation of nutrition policies. Future research could also examine the health curriculum in Prince Edward Island schools, evaluating the substance and depth of nutrition related messages and tracking the changes in the curriculum in response to the new school nutrition policies. Projects are also currently underway to develop school nutrition policies at other grade levels so the policy development process and outcomes from these projects also offer additional opportunities for future research.

On a national and international level, greater efforts on the part of researchers to systematically document policy development processes in schools may provide further insights for decision makers who wish to undertake policy development processes that are informed by an evidence base. Sharing the experiences of research efforts that involve collaborations across disciplines, such as education and nutrition, are particularly important to create unique opportunities for greater learning on the part of both disciplines. To optimize the potential for increasing the knowledge transfer across disciplines researchers should seek opportunities to disseminate findings in publications and by other means that will be accessed by diverse audiences including: the research community, policy makers, and public stakeholders.

5.4 Final reflections of the researcher

Despite the barriers, the development of nutrition policies in schools is possible through the dedication and commitment of people who are willing to lead and champion the process. Though the ultimate success and outcomes associated with the development of nutrition policies in PEI elementary and consolidated schools remains unknown, key informants have identified several specific factors that enabled the process. The use of a consultative approach that engaged

important stakeholders at the school level early in the process may be an important predictor of

the long term success of this initiative at the school level. On a broader level, considering the

support required by schools to develop, test and eventually implement nutrition polices, the

continued engagement of many groups both within and external to schools may be a necessity in

order to leverage the resources for this support.

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Appendix

Interview Guide: Case Studies with Lead School Team Members

Thank you for agreeing to this interview today.

I would like to tape record what you say so I don't miss any of it. I don't want to take the chance of relying on my notes and maybe missing something you say or changing your words some way, so I would very much like to use the tape recorder and take a few written notes as a back up. If at any time in the interview you would like to turn it off, all you have to do is press this button and the recorder will stop.

1. As an introduction, suppose I was someone who has never been to your school before, can you tell me a little bit about your school?

2. Thinking back in time, can you recall any healthy eating activities that your school was involved with **before** it became a lead school in the Healthy Eating Alliance School Nutrition Guidelines project?

What factors do you think led your school to become involved in the project?

3. Thinking back **over the past year**, what healthy eating activities has your school been involved with as part of the project?

4. What was your role in these activities?

5. As you think back on these activities, when did you first become involved with your lead school's team?

6. As you think about your involvement with this project, can you think of any ways that you personally have been affected by your involvement in this work?

7. From your perspective, what do you think has **helped** in the development of healthy eating

guidelines in your school?

Prompts (if required)

> ✓ people - Other people sometimes influence the development of policies. What other people if any, do you feel played a role in moving forward the work of the project in your school?
>
> In what way were they important to moving forward the project?
>
> ✓ actions - Can you think of any events that happened that you would say were important in moving the project forward?

8. From your perspective, what do you think may have **prevented** this process from moving forward in your school at times?

> ✓ people - Other people sometimes influence the development of policies. What other people, if any, do you feel may have played a role in preventing the project as it moved forward?
>
> How?
>
> ✓ actions - Can you think of any events that happened that you would say kept the project from moving forward?

9. Any other thoughts on barriers?

10. Sometimes school nutrition policies include guidance around fund raising, What role have fund raising issues played in this process?

11. Thinking about the year to come, what do you think are some issues that may arise around school nutrition policies in the next year?

12. How do you think schools might measure if school nutrition policies are working?

13. What would you like to see as possible outcomes of your involvement in the development of school healthy eating guidelines?

14. Thinking about the process in another way, suppose I was someone from another province calling you for information on the development of school nutrition policies and I didn't know anything about what had happened so far on PEI. What advice might you give to someone that was interested in starting this process?

Closing:

That completes all the questions I have for you at this time,

Is there anything else that you would like to say about the development of school healthy eating guidelines or your work in the project so far?

Protocol

Preparation

- consent form

- participant information kit

Negotiating Entry To Interview

- contact Project Leader to identify possible participants and site

- contact specific School District representative on the School Nutrition Policy Committee

  to discuss best strategies to use in approaching lead school administrator

- gather contact information for all potential participants

- establish contact with school administrator to discuss study

- record process for gaining access

- explain study, acquire permission to contact participants in lead schools

- provide a participant information letter and consent form to potential participants for

  consideration

- follow up if no confirmation received within 2 weeks

Preparation for Interview session

- arrange space and time with participant

- collect/organize materials (recorder, tapes, refreshments)

Gather data, Validate

- make observations of interview space, personal reflections,

- check equipment, interview

- code interview for place/time/participant, transcribe raw notes, note initial reflections on

raw notes

- transcribe tapes, note initial reflections on transcript of interview, copy

- prepare a contact summary sheet

- share transcripts with participant, set time line for retrieval of reviewed transcript

- follow up with interviewee to thank them for participation

Analysis of Data

- review of raw data (field notes, un-validated transcripts) for possible patterns, themes

- review of validated transcript for patterns, themes

- compare to other transcripts and contact summary sheets

- compare to internal and external documents and research journal to search for themes, patterns.

- develop alternate explanations

Analysis of Data

- review of field notes between cases - for identification of patterns, themes

- review of transcripts and contact summary sheets between cases - for identification of patterns, themes

- compare to themes identified through document analysis

- develop alternate explanations

- discuss themes with thesis supervisors, record reactions/reflections on these themes

Table 1

Lead School Selection Criterion

	School type		Linguistic focus		School size	
	Consolidated	Non-consolidated	English	French	< 200 students	> 200 students
Unit of analysis Principals						
Participant 1	x		x		x	
Participant 2		x	x			x
Participant 3		x	x			x
Participant 4		x		x	x	
Unit of analysis Teachers						
Participant 5	x		x		x	
Participant 6		x	x			x
Participant 7		x	x			x

x = presence of selection factor

Sample: Prince Edward Island School Nutrition Policy

FORMULATED BY ADMINISTRATION

SCHOOL DISTRICT

ADMINISTRATIVE REGULATION

SUBJECT: **School Nutrition** (for Elementary and Consolidated Schools without cafeterias)

EFFECTIVE DATE: May 12, 2005

Implementation Schedule

Schools will have support for the remainder of the 2004-2005 school year to prepare to implement most of the provisions of these regulations during the 2005-2006 school year, and the provisions regarding fund-raising campaigns will be implemented for the beginning of the 2006-2007 school year.

Therefore:
January - June 2005   Preparation for implementation
September 2005 - June 2006 Implementation of all provisions except those regarding fund-raising campaigns
September 2006   Implementation of provisions regarding fund raising campaigns

Regulations

The following regulations are set out to assist schools to achieve the objectives of the School District Nutrition Policy. These were identified in consultation with lead schools in the School District. There are several documents available to support schools with these regulations; these are listed at the end of the "Regulations" section.

Three sections follow: 1) Student Access to Food; 2) Quality of Food Available at School; and 3) Nutrition Education.

1.   Student Access to Food

Programming
All schools will continue to participate in and promote the PEI School Milk Program.
All schools are encouraged to stock an emergency food cupboard with healthy choices for students in need.
Schools are encouraged to provide breakfast or snack programs when a need is identified, which will:
1)   Be open to all students but will not be promoted as a replacement for breakfast eaten at home; and will

2)   Follow Best Practice Standards from Breakfast for Learning.

Pricing
Schools will support healthy food choices by pricing approaches which encourage students to choose healthy foods over less healthy foods when food is sold at school.

Promotion
Schools will work to develop an environment that promotes healthy eating by:
1)   Promoting and/or advertising only healthy food choices (those in the "Foods to Serve Most Often" and "Foods to Serve Sometimes" lists in the *Guide to Food Choices* (appendix).
2)   Not accepting advertising of food products for unhealthy food choices (those in the "Foods to Serve Least Often" list (appendix).
3)   Displaying attractive, current promotional materials (e.g. posters, displays, etc) related to healthy eating throughout schools.
4)   Carrying materials that support the Nutrition Policy and Regulations in school resource centres (e.g. books, videos, pamphlets).
5)   Participating in PEI Healthy Eating Alliance and Nutrition Month activities, where possible.

Time to Eat
Schools shall:
1)   Allow a minimum of 20 minutes for students to eat lunch;
2)   Encourage that foods are eaten after outside play, whenever possible.
3)   Assure that lunch is eaten in a calm positive atmosphere.

Student Choice
1)   Administrators and parent groups should involve students in planning school food choices.
2)   Students should be encouraged to choose foods from the "Foods to Serve Most Often" and "Foods to Serve Sometimes" lists (appendix).
3)   When possible, schools should provide microwaves in classrooms to broaden the range of food choices for students.

2.   Quality of Food Available at School

Criteria for Food and Beverages Available in Vending Machines, Canteens, School Lunch, Breakfast Programs, and Snack Programs
1)   Foods an beverages sold or made available at school for lunch, canteen, and snack programs will be selected from the "Foods to Serve Most Often" or "Foods to Serve Sometimes" lists (appendix) and will emphasize vegetables and fruit; lower fat white and chocolate milk; whole grain products; lean meats; foods prepared with little or no fat; and foods low in salt, sugar, and caffeine.
2)   All food and beverages in vending machines which are accessible to students will be selected from the "Healthy Vending Machine and Canteen Foods" list

(appendix). Vending machines will not be used to sell carbonated soft drinks, fruit drinks, fruit juices with less than 100% juice, or sports drinks.

3) Schools will manage and operate vending machines in accordance with the terms of this policy.

4) Teachers and administrators will encourage students to drink water and can facilitate their doing so by allowing water bottles in the classroom.

5) Schools should try to use local products first, where possible.

Special Functions

1) Although healthy foods school be promoted for daily consumption, as well as on celebration days, it is recognized that schools need to be flexible for celebration days.

2) Schools should not offer less healthy foods (e.g. candy, soft drinks, chips) as a reward to students for good behaviour, achievement, or participation in fundraising activities.

Fundraising

1) Fundraising activities by schools and parent groups should emphasize non-food products or healthy food choices from the "Foods to Serve Most Often" or "Foods to Serve Sometimes lists (appendix).

Food Safety

1) Administrators will ensure that school staff and parent volunteers are familiar with safe food handling practices.

2) Schools will adhere to the Provincial Anaphylaxis Policy.

3) Students should wash their hands before eating.

3. Nutrition Education

Curriculum

1) The School District will work with the Department of Education and community partners to promote the further development and enhancement of a current, relevant nutrition education curriculum and enhance the resources available to teachers to support their nutrition education activities.

2) Schools should use a comprehensive approach to nutrition education involving the whole school community (families, individuals and organizations in the community) in nutrition education activities to positively influence students' nutrition knowledge, attitudes, skills and eating habits.

3) When possible, schools should incorporate nutrition education into other subject areas and outside classroom activities.

4) Schools will support opportunities for staff development and training for effective delivery of nutrition curriculum.

Role Models

Recognizing the importance of role modelling in promoting healthy eating:

1) Teachers, administrators, and school staff should act as positive role models to

promote healthy eating within the classroom and school environment.

Guide to Food Choices

This Guide to Food Choices accompany the School District Healthy Eating Regulations. It consists of 3 food lists which have been developed based on Canada's Food Guide to Healthy

Eating. They are 1) *Foods to Serve Most Often;* 2) *Foods to Serve Sometimes;* and 3) *Foods to Serve Least Often.* A list of Healthier Vending Machine and Canteen Foods is also included. These lists are meant to assist schools in selecting healthy choices for when food is available (e.g. canteen, lunch program, snack program, breakfast program, emergency food cupboard, etc.). These lists can also be used as a guide for parents when selecting foods for lunches.

Note: The food lists are not meant to be used by teachers and administrators as a tool to evaluate students' lunches from home.

Foods to Serve Most Often: Serve These Foods Daily			
These foods should be the main focus in a healthy diet, with special emphasis on Grain Products and Vegetables and Fruit. Foods on this list tend to be rich in essential nutrients (vitamins, minerals, protein, carbohydrates, etc.) as well as low in fat.			
Grain Products	Vegetables and Fruit	Milk Products	Meat and Alternatives
-Whole Wheat or Multi-grain bread, rolls, bagels, english muffins, waffles, pancakes, pita bread, or tortillas -Low fat, high fibre muffins with vegetables or fruit -Cookies (made with oatmeal or dried fruit and whole wheat flour) -Crackers (low fat) -Unsweetened or low-sugar cereal (e.g. Corn Flakes®, Shreddies®, etc.) -Rice cakes, plain popcorn -Corn bread -Whole wheat noodles or pasta -Brown rice -Noodle or rice soup (homemade) Pasta salad	-Fresh vegetables and fruits -100% vegetable or fruit juice -Canned fruit (in juice or water) -Applesauce or applesauce blend products -Frozen fruit (without added sugar) -Frozen vegetables (without added fat) -Vegetable soups (homemade) -Vegetables (stir-fried) -Baked potatoes -Salads (without high fat dressing)	-White milk (2%, 1%, or skim) -Yogurt (2% milk fat or less) -Cheese -Cheese strings -Milk-based soups and chowders (homemade or canned low fat/lw salt)	-Chicken or turkey -Fish, Seafood (fresh or frozen) -Lean or extra lean beef or pork -Canned fish (packed in water) -Beans, lentils, dried peas (e.g. baked beans, lentil or split pea soup, chili with beans) -Eggs -Tofu -Peanut butter -Soya beverages -Nuts and seeds (unsalted) -Cottage cheese ★ choose baked or broiled meat and fish; not battered or fried
Foods to Serve Sometimes Serve These Foods 2-3 Times Per Week			

The foods featured on this list are also healthy choices, but they may by higher in calories, fat, salt or more processed than the foods found on the "Foods to Serve Most Often" list			
Grain Products	Vegetables and Fruit	Milk Products	Meat and Alternatives
-White bread, rolls, bagels, english muffins, waffles, pancakes, pita bread, or tortillas -Loaves (vegetable or fruit) -Sweetened Cereal made with oats or whole grains (e.g. Instant Oatmeal, Honey Nut Cheerios®, etc) -Cereal and granola bars (low fat) -Cereal snack mix -Graham wafers -Fruit bars (e.g. fig newtons) -Date squares -Noodle or noodle soup (canned or instant "baked type") -Biscuits, bannock -Scones -Pretzels -Rice Krispie® squares -Cheese, veggie or Hawaiian pizza -White rice or pasta	-Canned fruit (in light syrup) -Dried fruit* -Frozen fruit bars (100% fruit juice) -Fruit crisps -Canned vegetables -Vegetables in sauces (e.g. cheese sauce) -Vegetable soup (canned, regular) -Cheese, veggie or Hawaiian pizza	-Milk (whole) -Ice milk -Processed cheese products (e.g. slices, spreads) -Yogurt drinks -Milk based puddings -Flavoured milk drinks -Custards -Cheese, veggie or Hawaiian pizza	-Lean cold cuts -Lower fat hot dogs -Lower fat veggie hot dogs, burgers or nuggets** -Baked ham -Nuts and seeds (salted) **choose baked or broiled vegetarian products; not battered or fried

* Although dried fruit like raisins are nutritious, children should be encouraged to brush their teeth after eating them since they are sticky and naturally sweet and can promote tooth decay.

Foods to Serve Least Often **Serve These Foods Infrequently** **(1-2 times per month or less)**

The foods on this list tend to be quite high in fat, sugar, calories or offer little nutritional value. The foods on this list should be avoided most of the time, but can fit once in a while in a healthy diet.				
Grain Products	Vegetables and Fruit	Milk Products	Meat and Alternatives	Others
-Muffins (cake-like, commercially prepared) -Sugary breakfast cereal -Crackers (not low fat) -Granola bars (dipped, not low fat) -Cookies (commercial or higher fat regular recipe) -Noodles or noodle soup (canned or instant "fried type")	-Fried vegetables -French fries, all commercial types -Sweetened fruit juice -Fruit pies -Fruit leather	-Cream soups -Milkshakes -Regular ice cream	-Regular fat processed meats (e.g. Pepperoni, salami, bacon, bologna, etc) -Pizza with processed meats -Hot dogs, regular -Sausages, regular -Fried fish and chicken (e.g. chicken nuggets) -Regular ground beef -Sesame snaps	-Potato or nacho chips -Chocolate bars -Cakes -Doughnuts -Squares (e.g. brownies) -Candy -Pop -Iced tea -Sweetened fruit drinks -Sports drinks -Gravy

Healthier Vending Machine and Canteen Foods

The foods included on this list are healthy choices that can be included in vending machines or school canteens	
Beverages	Snacks
- Milk - Chocolate Milk - Juice boxes (100% juice) - Water	- Raw vegetables and dip (refrigeration required) - Fresh fruit - whole, pre-cut with dip, or fruit salad (refrigeration required) - Fruit cups - Applesauce or applesauce blend cups - Yogurt or yogurt tubes (refrigeration required) - Raisins and other dried fruit (e.g. apricots, apple slices, cranberries, pineapple, etc.) - Fruit bars (e.g. fig newtons) - Breadsticks and cheese - Bagels - Pretzels - Rice cakes or rice crisps - Cereal snack mix - Crackers & Topping (e.g. cheese, peanut butter, jam, etc.) - Granola bars (low fat, not dipped) - Nuts & seeds (peanuts, sunflowers, pumpkin seeds, almonds, soy nuts, etc.) Trail mix (combination of dried cereal, dried fruit, nuts and seeds)