

HEALTH PROMOTING ELEMENTARY SCHOOLS IN BRITISH COLUMBIA: AN
ANALYSIS OF SCHOOL WEBSITES

by

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A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF ARTS

in

The College of Graduate Studies

(Education)

The University of British Columbia

(Okanagan)

November 2011

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Abstract

The purpose of this study was to explore the Comprehensive School Health approach and its influence on a school's culture of health. In this study, school websites were analyzed for healthy school words, sentences, and placement of content to determine how well three schools in British Columbia are making use of technology for the purpose of sharing attributes of Health Promoting Schools within their school communities. The schools chosen were categorized by the number of years they had been members of the Healthy Schools Network of British Columbia and were located in communities rated “low” and “lowest” vulnerable in the section of Physical Health and Well-Being of the Early Development Instrument. The study was divided into four phases: 1) A pilot study was executed which resulted in a tool for the quantitative analysis; 2) An in-depth qualitative and quantitative content analysis of provincial school websites was conducted classifying healthy school terms into the four pillars of the Comprehensive School Health framework; 3) A thematic analysis of the qualitative data was conducted formulating fifteen themes; and 4) A final analysis was performed which examined the locations or communication trends of healthy schools terms on the websites. Results from the analyses revealed that the health content terms were focused mostly in the Comprehensive School Health categories of Teaching and Learning (26%) and Social and Physical Environment (37%) while 50% of the healthy schools terms were found to be located in school newsletters. This study found that schools did not utilize their websites to support the teaching and learning of the British Columbia Ministry of Education Healthy Living and Physical Education curriculum. Also missing from school websites were Healthy Schools Policy documents and information on

teacher wellness. A Comprehensive School Health conceptual framework of attributes of Health Promoting Schools was created from the results.

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List of Abbreviations

BC HSN	British Columbia Healthy Schools Network
BCIRP	British Columbia Integrated Resource Package
BCED	British Columbia Ministry of Education
CSH	Comprehensive School Health
DASH BC	Directorate of Agencies for School Health of British Columbia
EDI	Early Development Instrument
HPS	Health Promoting School
HSN	Healthy Schools Network
IRP	Integrated Resource Package
PAC	Parent Advisory Committee
PE	Physical Education
PHAC	Public Health Agency of Canada
SD	School District
WHO	World Health Organization

Acknowledgements

First, I wish to thank my thesis supervisor, Dr. Vicki Green for her tremendous support and guidance. Thanks for continuing to keep me focused as my thesis topic changed and went in so many directions. I truly enjoyed our conversations.

Thank you to my committee members, Dr. Stephen Berg and Dr. Sally Stewart. Your knowledge and insight to my topic helped to refine my research.

Thank you to the coders for your hard work in completing what became a lot of data to analyze. Your dedication to supporting my research was invaluable.

To my friends and colleagues, I thank you for your input and patience as I dedicated my time and efforts toward this study. I am certain some of you will be appreciative that I will have time again to socialize! Leanne Bilodeau, thank you for a very special friendship and for gifting me with your incredible wisdom and guidance throughout the entire Master`s degree studies.

Finally, to my family, I am not certain if thank you is enough. To my sisters and my parents, I could not have done this without your help, love, encouragement, and constant belief that I can accomplish whatever I set forward. You have provided a lifetime of support and inspiration for which I will be forever thankful. Kama, thank you for the many hours you spent editing and refining my thesis. You are amazing! To my daughter Ava and my son Kai, thank you for being the best children a mom could ask for. I could not have done this without your love, laughter, and joy. Lastly, to my husband Travis, you are my heart and soul. Thank you for believing in me and for understanding when I needed you the most. I am so lucky to have such a loving, caring, hard working husband and father for our kids.

Dedication

To Travis, Ava, & Kai

1.0 Introduction

Utilization of the health promotion process to achieve desired societal outcomes and the mission of schooling will ensure that school health is more than an add-on program—albeit coordinated. School health will cease to be “one more thing to do,” but rather become, “another way to do our thing.” (Hoyle, Bartee, Allensworth, & Fasha, 2010, p.165)

1.1 Context

Schools are an ideal setting for health promotion because they have the potential to reach a large number of young people (Gortmaker et al., 1999; O’Mara, 2001; Samdal, Nutbeam, Wold, & Kannas, 1998). Research has shown that adults establish positive health behaviours in childhood (National Health and Medical Research Council (NHMRC), 1996; Downie, Tanahill, & Tanahill, 1997). Furthermore, healthy children perform better academically (Anderson, Kalnins & Raphael, 1999), have better school attendance (Rampersaud, Pereira, Girard, Adams, & Metzl, 2005), and have higher self-esteem (Ekeland, Heian, Hagen, Abbott, & Nordheim, 2004). The way in which schools act upon this evidence will strongly affect our youth’s development of health.

In the 1990’s the World Health Organization (WHO) created initiatives that support Health Promoting Schools (HPS) as a “strategic means to prevent [key] health risks among youth” (WHO, 2010, para.2). In 2006, British Columbia established the Healthy Schools Network (BC HSN) to sustain children’s overall health and well-being through the Comprehensive School Health (CSH) framework (British Columbia Ministry of Education (BCED), 2010, para. 3). The CSH approach is an internationally recognized model that supports “student’s educational outcomes while addressing school health in a planned, integrated, and holistic way” (BC HSN, 2010, para. 4). The CSH approach incorporates the whole school, rather than focusing on single elements (See Appendix A and Chapter 2.).

The four pillars of the Comprehensive School Health approach are: Social and Physical Environment, Teaching and Learning, Healthy School Policy, and Partnerships and Services (Joint Consortium for School Health, 2010). The Social Environment component encompasses the quality of social relationships among and between staff and students, in combination with the well-being of students. Variable school conditions such as the availability of a playground, access to gym equipment, good sanitation, and the level of air cleanliness are all elements of the Physical Environment. The Teaching and Learning category includes the school-based activities and provincial curriculum that helps develop skills to improve student health and well-being. Healthy School Policy comprises management practices, decision-making processes, rules, procedures, and policies that promote health, well-being, and positive social and physical environments. The last pillar, Partnerships and Services, encompasses all associations that facilitate health and well-being; for example, families, community organizations, and the health sector. As a result, it is an entire school and community that work together to plan and deliver education, programs, community connections, and healthy environments.

Across the province, schools are at varying integration stages of the Comprehensive School Health framework. The extent to which health education curriculum and health promotion activities are used varies considerably depending on the priority of the individual teacher or school. Some specific differences are professional development or Healthy Schools knowledge level (Deschesnes, Trudeau, & Kébé, 2010), school goals (i.e. school has a healthy school goal), and membership in a coordinated network, such as the Healthy Schools Network of British Columbia (HSN BC). The Healthy Schools Network is fully described in Chapter 2. With varying degrees of implementation, one could argue that there

needs to be a unified shift in the paradigm to a comprehensive, holistic approach to school health promotion.

School health paradigms have changed over time from a focus on hygiene and disease, to prevention of substance abuse and unintentional injuries, to the paradigm of school health having a comprehensive and practical approach (O'Rourke, 2005). O'Rourke (2005) explains the paradigm shift in school health:

The functional perspective goes beyond the risk factor emphasis to one that promotes coordinated school health as a contributor to improved functional capacity and participation of school-aged youth in an increasingly technologically oriented world economy. Coordinated school health needs to be viewed as a contributor to broader societal goals such as an improved work force and more functional citizenry, and as an investment in human capital, not expenditure. An expanded coordinated school health paradigm needs to focus on the broader outputs of an effective school health program, not its costs. (p. 112)

School districts and administrators who operate under the assumption they cannot afford a school health program for its educational value should know that it leads to a broad range of positive outcomes, including lowered absenteeism and higher test scores (Rees & Sabia, 2010). In British Columbia, this paradigm is working with success at some schools, while others have much to improve upon.

The school health paradigm is pushing schools in the direction of extending beyond the government-mandated health and career education, career and planning, and graduation transitions curriculum (British Columbia Ministry of Education, n.d.). Development of an effective school health program promotes a comprehensive and holistic approach to health,

such as the Comprehensive School Health approach, including a review of healthy school policy, forming alliances with the health authority and other community groups, and creating a whole school environment that encourages school health and wellness.

The varying degrees of an effective school health program are influenced by many external or community factors such as the community's geographical location (Huang et al., 2009), racial and poverty composition of the school (Southworth, 2010), and by social environments at home (Elder et al., 2010). The school's neighbourhood conditions (crime rates) have shown to affect engagement of the community and parental involvement (Cohen-Vogel, L., Goldring, E., & Smrekar, C., 2010). Influences in the community can also produce positive outcomes in the successful development of children, including access to leisure time in the community, through the use of parks, libraries, and community centers (Roth & Brooks-Gunn, 2000) and the opportunity to participate in sports and clubs in the community (Howie, Lukacs Pastor, Reuben, & Mendola, 2010). There is evidence that community programs, such as Boy Scout groups and the Girl Guides, can positively impact the results of a healthy lifestyle program aimed at obesity prevention (Smibert, Abbott, Macdonald, Hogan, & Leong, 2010). The school-community link is also associated with the ability to tackle environmental sustainability and climate change (Flowers & Chodkiewicz, 2009). Thus, healthy schools programs are more effective when partnered with the community. Healthy communities help in the establishment of healthy schools.

In this study, the Early Development Instrument (EDI) was used as a tool to delimit the number of schools in the sample with the assumption that healthy schools exist in healthy communities. The Early Development Instrument considers the link between schools and the community by connecting the outcomes of a community to prepare children for school. The

EDI, an assessment of children's early development, was conducted in British Columbia by the Human Early Learning Partnership to measure how communities influence a child's development prior to kindergarten (Human Early Learning Partnership, 2011). Teachers conducted assessments that rated a community's level of vulnerability. School Districts in British Columbia were labelled as "lowest," "low," "average," "high," and "highest" vulnerable with the "lowest" indicating that students had the highest level of school readiness (The Offord Centre for Child Studies, 2004). The EDI measures five areas of children's development:

1. physical health and well-being
2. social competence
3. emotional maturity
4. language and cognitive development
5. communication skills. (The Offord Centre for Child Studies, 2004, p. 2)

Teachers rated their students based on 104 items with thirteen from the Physical Health and Well-Being domain (Guhn, Gadermann, & Zumbo, 2007). Some of the thirteen items included holding a pencil, running on the playground, motor coordination, and adequate activity levels for classroom activities (Corter, Patel, Pelletier, & Bertrand, 2008). The Physical Health and Well-Being category was used as a determinant of the success of communities to prepare students for the physical challenges of school. For example, children that are the least vulnerable - "low" and "lowest" categories of the EDI - should enter kindergarten well-nourished, well-rested, and physically capable of age-appropriate activities. Therefore, in this study, the health promoting schools, indicated by their extended membership in the Healthy Schools Network, are also in communities that are health

promoting, according to their location in the “low” and “lowest” vulnerable regions in British Columbia. The role of community factors (geographical location, socioeconomic status) on the health promotion practices of schools needs to be further examined (see Chapter 2, Section 2.7 for more information on the EDI).

One strategy for meeting the objective of a holistic approach to health promotion is to use the school website as a tool for communicating health messages. A school website helps to shape the culture of a school (Peterson & Deal, 2009) by providing information that is available to the entire community. Websites have the potential to assist with shared messages related to all four areas of the Comprehensive School Health framework. In this study, school websites were analyzed for healthy schools words, sentences, and the placement of content on websites to determine how well three British Columbia schools are making use of technology for the purpose of sharing attributes of Health Promoting Schools with their school communities. No previous studies have evaluated the influence of Health Promoting Schools on a school’s culture of health promotion as evidenced by the school website. More research on the direct link to attributes of HPS and data placement on school websites is necessary to assess the effect that Comprehensive School Health’s approach has on what schools share with the school community. The results of this study may prove valuable to support strategic changes to the way educators and school administrators utilize websites as a means to distribute health messages.

1.2 Purpose of the Study

The purpose of this study was to explore the Comprehensive School Health approach, in particular how schools belonging to the Healthy Schools Network schools were portraying

this model through their websites and thus contributing to the school's culture of health. The objectives of the study were to:

1) Analyze all healthy school terms on school websites to determine how well three schools in British Columbia are making use of technology for the purpose of sharing attributes of Health Promoting Schools within their school communities, and

2) Determine where healthy school content was placed in the school websites (i.e. newsletters and home pages) to understand how health messages were being communicated to the public via school websites.

Terms that reflected attributes of health promotion were recorded from the school websites to formulate patterns, trends, and themes, utilizing both content and thematic analysis methods.

The three schools chosen for this study belonged to the Healthy Schools Network from 2006/2007 to 2010, and thus, demonstrated a commitment to the Comprehensive School Health approach. Schools in the sample were in communities who successfully fostered the healthy development of the physical health and well-being of their children as evidenced by the Early Development Instrument (EDI). The communities labelled as “low” and “lowest” vulnerable on the EDI demonstrated greater resilience in supporting children’s development (Janus et al., 2007); thus their children had fewer health and wellness problems. The EDI demonstrates the idea that there is a school-community link that assists in the successful development of the health and wellness of school age children.

1.3 Research Questions

The research attempted to answer the following questions:

1. What health promoting school attributes do three elementary schools in British Columbia place on their websites for members of the school community to find?
2. How are these attributes presented (i.e. links to websites, newsletters) to members of the school community?

1.4 Definitions

The following definitions used throughout this thesis are from the World Health Organization's *Health Promotion Glossary* (1998) prepared by Don Nutbeam, WHO Collaborating Centre for Health Promotion, Department of Public Health and Community Medicine, University of Sydney, Australia (pp. 1-20).

Determinants of Health The range of personal, social, economic and environmental factors which determine the health status of individuals or populations.

Health Health is defined in the WHO constitution of 1948 as:
A state of complete physical, social and mental well-being, and not merely the absence of disease or infirmity. Within the context of health promotion, health has been considered less as an abstract state and more as a means to an end which can be expressed in functional terms as a resource which permits people to lead an individually, socially and economically productive life. Health is a resource for everyday life,

not the object of living. It is a positive concept emphasizing social and personal resources as well as physical capabilities.

Health Behaviour

Any activity undertaken by an individual, regardless of actual or perceived health status, for the purpose of promoting, protecting or maintaining health, whether or not such behaviour is objectively effective towards that end.

Health Education

Health education comprises consciously constructed opportunities for learning involving some form of communication designed to improve health literacy, including improving knowledge, and developing life skills which are conducive to individual and community health.

Health Promoting Schools

A Health Promoting School can be characterized as a school that is constantly strengthening its capacity as a healthy setting for living, learning and working.

Health Promotion

Health promotion is the process of enabling people to increase control over, and to improve their health.

1.5 Thesis Overview

Chapter 1 details an overview of the research context, the research purpose, research questions being investigated, definitions of terms, and an overview of the thesis structure.

Chapter 2 explores the concepts related to Health Promoting Schools, the Comprehensive School Health approach, and the thesis methodologies in the form of a literature review.

Chapter 3 describes the combination of research strategies used to address the research questions.

Chapter 4 provides an analysis of data and study results.

Chapter 5 presents a synthesis of the research along with a description of the limitations and recommendations for future research.

2.0 Literature Review

2.1 Chapter Overview

This chapter investigates the literature describing the health status of Canadian children and the developments in health promotion in schools. Additional discussion of the literature associated with research methods including, the Healthy Schools Network, the Early Development Instrument, thematic analysis, content analysis, and website communication is presented.

2.2 Health of Canadian Children

Teachers and administrators often think about student health in terms of outcomes. An indicator that a child is developing well is when they attain personal maturity and acquire “the life skills needed for entry into adulthood and civic society” (Boyce, 2004, p. 35). Rather than analyzing health in terms of goals, outcomes, and endpoints, the World Health Organization emphasizes that health should be viewed as a resource for daily living (WHO, 1986). Healthy young people are better able to manage the challenges that come with maturity, including physical changes (puberty), cognitive changes, and the demands of school and employment (Boyce, 2004). The following section explores the current status of the health of school age Canadian children according to determinants of health as set out by the Canadian Institute of Child Health (2000): parenting and family life, education, healthy habits, safety, social and sexual health, health and well-being outcomes, injuries, cancer, hospitalization, and death.

2.2.1 Parenting and family life.

A change to the family structure in the last three decades (Boyce, 2004) has meant that young people are requiring support in dealing with these changes. There has been an

increase in employment among women with children (Almey, 2007). Divorce rates have lowered in 30 years, but more couples have been choosing to cohabitate and breakups from those unions are not captured by statistics (Proudfoot, 2010). Proudfoot (2010), states that the impact of divorce is heightened during the separation. “It's what happens after — when the parents bicker over everything, over every cent, over every visit, and the kids are placed in the middle of that — that is bound to be very bad.” Further, she states,

Most children of divorce do not experience severe developmental problems...but they are at increased risk for depression, anxiety, behavioural problems, receiving bad grades or leaving school earlier, becoming young offenders or experiencing their own relationship problems down the road. (Proudfoot, 2010, para. 3-4)

When young people do not feel supported and become depressed, their behaviour may be altered.

If students are struggling with lowered self-worth, they may be more susceptible to suicide. The McCreary Adolescent Health Survey revealed that seven percent of female youth and three percent of male youth are reported to make a suicide attempt (McCreary Centre Society, 2008). According to the Crisis Intervention and Suicide Prevention Centre of BC (2010), 12 % of high school students in BC reported seriously considering suicide, and five percent reported making a suicide attempt in 2008. Eighty one youth in BC took their own lives between 2003 and 2007 (p. 1).

The literature reveals a correlate between a child's physical health and the following factors: family dysfunction, depression experienced by mothers, and hostile-aggressive styles of parenting (Jones et al., 2002). Physical health status can also be affected by social background and neighbourhoods (Ross & Mirowski, 2001) and poverty (Jones et al., 2002).

Canada is faring well: only 9.3% of parents of young children report having signs of depression; 90.2% of young children live in well functioning families; and 93.3% of young children live in homes with high positive parental interaction (Government of Canada, 2007, p. 29).

2.2.2 Education.

2.2.2.1 *Parent's education.*

Jones et al. (2002) disclosed that the more years of education the primary care giver has the greater the physical health outcomes for their children. Since the 1980's, there has been a steady incline in the percentage of mothers with young children that have a university degree (Human Resources Development Canada, 2003). In Canada, 53% of parents reported having a form of post-secondary education, while 63.7% of young children living with two parents and 68.3% of children living with a single-parent were in homes where their parent or parents were studying or working (Government of Canada, 2007, p. 29). "Higher maternal education levels are also linked to higher family income and to the amount of time parents spend encouraging and helping children with schoolwork" (HRDC, 2003, p. 3). Higher family income also means that a family is more likely to participate in recreational activities, such as sports and arts (HRDC, 2003).

2.2.2.2 *Health literacy.*

Health literacy, defined by Irving Rootman as "the ability to access, understand, and communicate information to engage with the demands of different health contexts to promote good health across the life-course" (Hemming & Langille, 2006, p. S32), indicates the importance of literacy skills to a healthy way of life. The National Literacy Secretariat, Human Resources Development Canada, and the Organization for Economic Cooperation

and Development (1997), released a report stating that people with low literacy were more likely to take part in unhealthy practices, such as:

- Smoking,
- Poor nutrition,
- Infrequent physical activity,
- Lack of seatbelt use or wearing of bicycle helmets,
- Less prevalence of breast feeding (where applicable),
- Less likely to ever have had a blood pressure check, and
- (Among women) less likely to practice breast self examination and to obtain pap smears. (p. 9-16)

People with low literacy are less likely to not have access to decent jobs and more likely to be living in unsafe or dangerous environments (LiteracyBC, 2005). Accordingly, education and literacy can be positively affected if societies decrease gaps in health outcomes and socioeconomic status (Canadian Public Health Association, 2008). Greater health outcomes can be strengthened with a focus on improving health literacy skills. Health literacy means that a person has enough knowledge and confidence that they will take actions to improve their own health and the health of those around them.

2.2.3 Healthy habits.

2.2.3.1 Tobacco use.

Smoking prevalence among Canadians has decreased from 1994-2005 (Svenson et al., 2008). Boyce (2008) reports “just under one-third of Canadian Grade 9 and 10 students indicate that they have smoked a cigarette” (p. ix). Data collected from the Youth Smoking Survey (YSS) indicate that three percent of youth in grades six to nine reported that they are

current smokers with a mean of 10.9 cigarettes per day; whereas, 13% of youth in grades 10-12 reported they are current smokers, smoking an average of nine cigarettes per day (Health Canada, 2009). In all grades, more males reported being current smokers than females (Health Canada, 2009). Smoking poses a serious health risk and is a preventable cause of premature death in Canada.

2.2.3.2 Substance abuse.

Major findings indicate that the prevalence of alcohol and marijuana use have dropped from 2004 to 2009 (Health Canada, 2009). The survey reports that cannabis use decreased from 14.1% in 2004 to 10.6% in 2009. Correspondingly, the prevalence of alcohol use among Canadian youth dropped to 76.5% in 2009 from 79.3% in 2004. Experimentation with alcohol is occurring in younger students and both boys and girls report engaging in binge drinking at social events (Boyce, 2004, p. xvii). Youth who use marijuana are more likely to engage in other risky behaviours (PHAC, 2006a), including experimenting with sex.

2.2.3.3 Physical health.

According to Active Healthy Kids Canada, only 12% of Canada's youth and children meet the guidelines for 90 minutes of daily exercise (2010). Regular physical activity has been well documented as a measure for preventing chronic disease, such as coronary heart disease, hypertension, type II diabetes mellitus, colon cancer, obesity, osteoporosis, and depression (Delisle, Werch, Wong, Bian, & Weiler, 2010). Kids may not be getting the physical activity needed for optimal growth when 60% report watching two or more hours of television per day, with grade 8 boys scoring the highest at 71% (Public Health Agency of Canada (PHAC), 2008a). These statistics are startling, considering that several reports indicate that activity levels for both males and females decrease with age (McCreary Centre

Society, 2006; PHAC, 2008a). Physical activity is vital to a child's development and well-being and for the prevention of chronic disease and obesity.

2.2.3.4 Nutrition.

The results of the 2004 *Canadian Community Health Survey: Nutrition* indicates that the prevalence of overweight and obesity in children has risen by about 70% since the 1978/79 survey (Shields, 2008). Overweight and obesity rates are linked to the consumption of fast food (Lobstein, Baur, & Uauy, 2004) and children not eating enough fruit and vegetables daily (PHAC, 2010). In the *Canadian Health Behaviour in School-Aged Children Survey*:

Girls ate more nutritious foods such as fruits and vegetables than did boys. However, more girls than boys skipped breakfast and reported dieting or doing something else to lose weight, especially in the higher grades. Boys, more than girls, consumed foods high in sugar, salt, and caffeine, such as soft drinks, diet soft drinks, potato chips, French fries, and cake or pastries. (PHAC, 2005, para. 6)

In addition to gender differences, healthy eating habits vary across geographical areas.

The PHAC *Risk Factor Atlas* hypothesizes that “people in urban centres were more likely to consume at least five servings of fruits and vegetables than people living in rural settings. This may be attributable to the wider availability and variety of fruits and vegetables and higher income levels to afford fruit and vegetables” (PHAC, 2010a, para. 4).

Additionally, Canadians living in poverty are at greater risk of malnourishment and inadequate access to nutritious foods (Kirkpatrick & Tarasuk, 2003; PHAC, 2006a).

2.2.4 Safety.

2.2.4.1 Seat belts and helmets.

Seat belts have been mandatory in British Columbia since 1977 and in 1985, a child restraint legislation was passed making it compulsory for all children under 18 kg to be in an approved restraint. In a 2007 traffic collision survey, police reported “among 753 passengers in child restraints, 167 (22.2%) were injured and none were killed” (ICBC, 2007, p. 37). In the youngest age group surveyed by Statistics Canada (ages 12-19), only 30.6% report wearing a bicycle helmet, with females more likely to wear helmets than males (2009). Five of ten cyclists in British Columbia who were killed in 2007 were not wearing helmets (ICBC, 2007).

2.2.4.2 Environmental quality.

Air quality in Canada has been improving over the past three decades (Brown, 2005), and in Vancouver alone, the concentration of carbon monoxide has decreased 76% since 1974 (Brown, 2005). However, according to Environment Canada (2010), the environment is not getting better. “Over the 1990 to 2007 period, the indicators for greenhouse gas emissions and ground-level ozone exposure showed a worsening trend” (para. 6). Poor air quality contributes to illness and disease. In the United States, “an estimated 25% of preventable illness worldwide can be attributed to poor environmental quality...with 50,000 premature deaths and an estimated \$40 billion to \$50 billion in health-related costs annually” (U.S. Department of Health and Human Services, 2000). Children are even more susceptible than adults to environmental toxicants because their “tissues and organs are immature and not fully developed and they have behaviours that put them at risk for increased contact with environmental contaminants” (Canadian Institute of Child Health (CICH), 1997, p. 1). The

quality of children's indoor environments is important to the health of Canadian children as it is estimated that they spend 90% of their time indoors (CICH, 1997). Toxins such as gases, pesticide residues, and moulds can build up in homes and schools. Chemical exposure has been linked to many childhood disorders including cancer (Zahm & Ward, 1998) and asthma (Trasande & Thurston, 2005). Since the 1970's the incidence of childhood cancer has risen in Canada by 28% (National Cancer Institute of Canada, 2003) while 13% of Canadian children aged 0-11 had been diagnosed with asthma in 2000/2001 (Garner & Kohen, 2008).

2.2.5 Social and sexual health.

Early sexual activity can provoke emotional problems such as depression and can lead to pregnancy and sexually transmitted diseases. In a longitudinal study from 1996 to 2006, researchers tracked rates of teen pregnancies to reveal that pregnancy rates have dropped nearly 37% in Canada over a decade (McKay & Barrett, 2010). The researchers suggest sex education and easier access to birth control as two reasons for this reduction. However, in the Province of British Columbia, teen pregnancy rates have been steadily increasing, from 5 147 teen pregnancies in 1998/1999 (British Columbia Vital Statistics Agency, 1999) to 7 149 in 2009 (British Columbia Vital Statistics Agency, 2009). There are a number of possible negative outcomes for both the baby and the mother in this scenario. Infants are more likely to die during their first year of life than are infants born to older women (Smith & Pell, 2001). Further, education and employment opportunities for teens is often limited, with children of teen mothers more likely be economically disadvantaged (Knighton, Houle, Berthelot, & Mustard, 2000).

2.2.6 Health and well-being outcomes.

The emotional and mental health of children is an important indicator of health and well-being that relates directly to many areas of development, including self esteem and academic success (Government of Canada, 2007). Eighty five point seven percent of Canadian children and youth do not display signs associated with emotional problems and anxiety (Waddell et al., 2005). For the other 14.3% of Canadian children, both mental and emotional health problems are correlated with early sexual activity (Hallfors, 2005), sexual and physical abuse (Edwards, Holden, Felitti, & Anda, 2003), and chronic drug abuse (Mason, Hitchings, & Spoth, 2008; Subramaniam, Harrell, Huntley, & Beck, 2009).

At the root of some emotional and mental health disorders, such as depression, anxiety, or even suicide, is a child that has been bullied (Craig, 1998; Olweus, 1991). In 2002, between 17 and 25 percent of boys and girls in grades six through ten report having been bullied once or twice in the past few months, and between four and 12 percent report having been bullied once a week or more (Public Health Agency of Canada, 2008). Bullying can affect the parents and community just as it affects the peers of youth who are bullied or are bullies themselves (Goldbaum, Craig, Pepler, & Connolly, 2003). El-Sheikh, Cummings, and Goetsch (1989) suggest that one can become distressed by merely observing bullying. While in 2008 the rates of bullying declined slightly, fight behaviour increased to the point that as many as 18% of boys and eight percent of girls reported having been in four or more fights in one year (Public Health Agency of Canada, 2008). Fighting behaviour is aggressive, harmful and can lead to injury.

2.2.7 Injury and violence.

The majority of injuries are preventable and occur in controlled environments, such as homes and schools. The Public Health Agency of Canada (2006) revealed that about one in five students typically miss one or more days of school or other usual activities in a twelve month period due to an injury and as many as 50% of Canadian students reported having had an injury requiring medical attention during the past year (Boyce, 2004, pp. xvi). Boys consistently experienced more injuries than did girls and the incidence of injuries peaked for both in Grade 8 (Boyce, 2004). The most common injury for both males and females is from sports or physical exercise (Statistics Canada, 2009a).

2.2.8 Cancer.

On average, 850 children aged 0-14 will develop cancer in Canada each year (PHAC, 2009). It is the most common disease related cause of death, with leukemia (33% of new cases), brain and spinal tumours (20% of new cases), and lymphoma (12% of new cases) being the most common cancers in 2004 (PHAC, 2009). In British Columbia, there are about 130 new cases each year in children under the age of 17 (BC Cancer Agency, 2008). Comparable with national data, 30% of cancer diagnoses in British Columbia were leukemia (BC Cancer Agency, 2008).

2.2.9 Hospitalization.

The most common causes of injury for children in 2002/2003 that resulted in hospitalization were falls, poisoning, suffocation, and contact with a hot object or substance (Government of Canada, 2007). Nationally, there were 1 268 injuries that resulted in hospitalization in 2002/2003: 386.4 per 100 000 (Government of Canada). For children aged 5-14 years, the rate of hospitalization was highest in New Brunswick, Newfoundland, and

Saskatchewan, and lowest in Ontario, Quebec, British Columbia (Canadian Institute of Child Health, 2000). Male children tend to have higher rates of injury requiring hospital admission.

2.2.10 Death.

The leading causes of death for children aged five to nine years in Canada are accidents (unintentional injuries), malignant neoplasms, and congenital conditions (Statistics Canada, 2009a). Between 2006 and 2007, the death rate for all causes amongst children aged five to nine increased slightly from 0.11 to 0.12 with 193 deaths occurring (Statistics Canada, 2010). The leading cause of death in British Columbia in 2009 was neoplasms (British Columbia Vital Statistics Agency, 2009).

2.2.11 Summary.

The health of Canadian children is very important because they are the future of Canada. Our nation will not succeed if our children are not achieving in school because they are not healthy. Positive health trends in Canadian children include reduced use of tobacco, alcohol, and marijuana. However, there are many health concerns including childhood obesity, low rates of physical activity, and emotional and mental health disorders. The health needs of Canadian children can be supported by the education system. The next section reviews the relationship of health to schools.

2.3 Healthy Schools

The British Columbia model for healthy schools is based on two concepts:

1. Healthy kids are better able to learn, and
2. Schools can have an impact on the health of their students. (BC Ministry of Children and Families, 2003, p. 3)

Most children spend approximately half of their waking hours during the week in a school environment (PHAC, 2010). Schools can help with the government's target for better population health. Evidence suggests that the comprehensive approach to health aids in improving eating habits, physical activity levels, and obesity levels (Davidson, 2007; PHAC, 2010). Starting early, with regular monitoring of infant and child growth, helps with identifying the risk of obesity (PHAC, 2010). During the school years, policies, initiatives, and programs that support the Healthy Living curriculum in the British Columbia Integrated Resource Package (BC IRP), and a whole-school or comprehensive approach, help to increase student knowledge about food and diet (International Union for Health Promotion and Education (IUHPE), 2010).

Alberta Learning (2002) lists benefits to health promotion in schools as: improved student achievement, lowered absenteeism, reduced drop-out rates, less student alienation, and lower incidence of smoking and alcohol use. Havlinova & Kolar (2005) evaluated 24 schools with Comprehensive School Health programs and revealed that the CSH programs positively impacted the school environment. Teachers believed that the school health climate had improved and that students, staff, and parents indicated improvements in their knowledge of health topics. Schools reported an improvement in whole school morals and values, including equity, empowerment, and action competence, and a better social climate (such as students feeling safe), compared to schools that do not concentrate on health promotion. This study also revealed an increase in community involvement with outside agencies becoming active in schools. A review of literature supports the effectiveness of Health Promoting Schools (St. Leger & Nutbeam, 1999) and comprehensive school health (Allensworth, 1994; Kolbe, 2005). Schools have not always had a comprehensive approach to health promotion.

The next section provides the history of HPS and CSH with a focus on British Columbia schools.

2.4 History of Health Promoting Schools and Comprehensive School Health

A review of literature revealed a historical perspective of HPS and CSH and a timeline was compiled. The timeline revealed a shift in paradigm from a government focus on medical inspection of students for diseases, to recognition that schools can be venues for health promotion and can work towards prevention of disease and illness. This section is comprised primarily of direct quotes from related documents, compiled in chronological order, to illustrate the evolution of health promotion in schools.

1890's	Public reform targets schools after outbreaks of diseases such as smallpox, diphtheria, and typhoid fever that had a lasting impact on attitudes towards healthy children (Warsh & Strong-Boag, 2003).
1893	The Public Health Act of British Columbia was passed and later proclaimed in 1895. The Public Health Act “legislated cooperation among teachers, parents, and inspectors” (Warsh & Strong-Boag, 2003, p. 290).
1906	The medical inspection of children in British Columbia schools commenced.
1910	School Health Inspection Act of British Columbia called for a full medical examination of all students. It “reveals the disciplinary goals of the framers and their conception of “healthy” children” (Warsh et al., 2003, p. 292).
1933	The Canadian Physical Education Association (CPEA) developed to support schools in becoming “Health Promoting Schools.”
1948	CPEA became the Canadian Association for Health, Physical Education, and Recreation (CAHPER).
1977	World Health Assembly launches the Declaration of Alma-Ata which was a major milestone in the Health for All movement. “The Declaration set a new direction for health policy by emphasizing people’s involvement, cooperation between sectors of society and primary health care as its foundation” (WHO, 2009, p. 6).

1977	Health for All was proposed by the World Health Assembly. The movement aimed at cities finding the highest possible level of health for their societies by 2000 (Department of Health, 2009).
Late 1970's & 80's	"Saw growth in number, scope, and sophistication of classroom-based educational programs directed toward achieving behavioural goals" (St. Leger & Nutbeam, 2000, p. 45).
1980's	"Saw growing recognition of the ways the organization and social environment of school affected the health behaviour of students. School health intervention research, influenced significantly by Bandura's social learning theory, began to focus on organizational change to create a more supportive environment for behaviour change and led to development of more comprehensive school intervention strategies" (St. Leger & Nutbeam, 2000, p. 45).
1980's	The Health Promoting Schools concept was proposed by the WHO (Deschesnes, Martin, & Jomphe Hill, 2003).
1982	A Cross-National Survey on Health Behaviours in School-Aged Children (HBSC) was initiated by researchers from three countries: England, Finland, and Norway. Shortly thereafter, the project was adopted by the World Health Organization (WHO) Regional Office for Europe as a WHO Collaborative study. Between 1983/84 and 1989/90 three more surveys were conducted and the number of participants climbed to 16 countries, including Canada (PHAC).
1986	The First International Conference on Health Promotion was held in Ottawa, Canada, producing what is now widely known as the Ottawa Charter for Health Promotion. This conference was followed by others which explored the major themes of the Ottawa Charter on healthy public policy and on supportive environments for health (WHO, 1998, p. v).
1987	The Coordinated School Health Program (CSHP) model was proposed by Allensworth and Kolbe (Hoyle et al., 2010).
1988	International meeting on Healthy Public Policy further clarified the definition of health promotion (WHO, 2009).
1989	The mandate for the school system in British Columbia was established in regulation. This included a "statement of policy order," laying out the mission and general policies for the school system. One of the key policy areas was called human and social development. Prominent in this policy was the development of an understanding of

physical health and well-being: British Columbia policy sets out three goals for public schools:

- Intellectual development—supported by family and community
- Human and social development—shared with family and community, and
- Career development—shared with family and community.
- The goal of human and social development is further described:
 - “To develop an understanding of the importance of physical health and well-being...” (British Columbia Ministry of Education, 2005, p. 5).

1989	OPHA Frontier College Literacy and Health Project, Phase One (Rootman & Ronson, 2005, p. S63).
Late 1980’s	A series of groundbreaking reports in both Canada and the United States established a link between education and health outcomes. These reports also galvanized the interest of Canadian education and health researchers, inspiring them to study this important field. By 1994, the Canadian Public Health Association established the National Literacy and Health Program through which it has worked with a network of partners in the health and literacy fields to establish a firm foundation for health literacy as an area of inquiry (Canadian Council on Learning, 2007, p. 4).
1990’s	Further testing of the concepts (Comprehensive School Health and Health Promoting Schools) led to a growing recognition that schools are not just convenient locations for interventions, or “institutions” that need reorganizing to make them more effective for health promotion (St. Leger & Nutbeam, 2000, p. 45).
1990	The Healthy Schools initiative began in BC in 1990 as a pilot project in the Ministry of Health (British Columbia Ministry of Children and Families, 2003).
1992	The European Health Promoting Schools Network was set up jointly by the European Regional Office of the WHO, the Council of Europe (CE) and the Commission of the European Communities (CEC) (WHO, 1998a).
1993	OPHA Publishes “Partners in Practice: The Literacy and Health Project, Phase Two” (Rootman & Ronson, 2005, p. S63). The project fostered partnerships between literacy groups and health groups, while increasing information on health and literacy.

1994	The Canadian Public Health Association (CPHA) established the National Literacy and Health Program (NLHP) with funding from the federal government's National Literacy Secretariat (Canadian Council on Learning, 2007, p. 8).
1995	Minister of Health announced the launch of the Aboriginal Head Start Initiative to develop an early intervention program for Aboriginal children and their families who live in urban centres and large northern communities, in consultation with Aboriginal groups in Canada (PHAC, 2005).
1995	WHO established the Global School Health Initiative that has become widely known as Health Promoting Schools (HPS) (Tang et al, 2008).
1996	BC Provincial Government released the Tobacco Control Act. Currently the Act: <ul style="list-style-type: none"> • bans smoking in indoor public places and work places; • bans smoking near public doorways, open windows, and air intakes; and • limits the display and sales of tobacco and tobacco products. (PHAC, 2005).
1997	National Children's Agenda was developed by national, provincial, and territorial governments as a strategy to improve the well-being of Canada's children (Government of Canada, 1997).
1997	The Jakarta Declaration on Leading Health Promotion into the 21st Century was signed at the <u>World Health Organization's</u> 1997 Fourth International Conference on Health Promotion held in Jakarta. The declaration reiterated the importance of the agreements made in the <u>Ottawa Charter for Health Promotion</u> , and added emphasis to certain aspects of <u>health promotion</u> . The declaration included the following five "priorities for health promotion in the 21st century" <ol style="list-style-type: none"> 1. "Promote social responsibility for health" 2. "Increase investments for health development" 3. "Consolidate and expand partnerships for health" 4. "Increase community capacity and empower the individual" 5. "Secure an infrastructure for health promotion" (WHO, 2000).
1998	Pfizer U.S. holds first annual conference on health literacy.
2000	First Canadian Conference on Literacy and Health, "Charting the Course for Literacy and Health in the New Millennium" Ottawa (Rootman & Ronson, 2005, p. S63).

- 2000** At the Education for All World Education Forum in Dakar agreement was reached among major United Nations agencies to harmonize actions around common elements in each of their respective approaches to school health. UNESCO, UNICEF, WHO, the World Bank and several non-governmental organizations agreed on a common structure for school health initiatives known as the Focusing Resources on Effective School Health (FRESH) framework (Tang et al, 2008).
- 2001** Health and Literacy Action Conference, St. John's, NL (Rootman & Ronson, 2005, p. S63).
- 2001** Canada's Healthy Workplace Week began in 2001 to help increase awareness of how important healthy workplaces are to both the short and long term success of organizations (Excellence Canada, n.d.)
- 2001-2003** Review of high school graduation requirements led to a description of the attributes all graduates were to achieve:
- The knowledge and skills required to be socially responsible citizens who act in caring and principled ways, respecting the diversity of all people and the rights of others to hold different ideas and beliefs...
 - The attitudes, knowledge, and positive habits they need to be healthy individuals, responsible for their physical and emotional well-being.... (BC Ministry of Education, 2005).
- 2002** A group of researchers led by Dr. Irving Rootman was funded for three years by the Social Sciences and Humanities Research Council to develop a national program of research in literacy and health for Canada in partnership with the Canadian Public Health Association (Canadian Public Health Association, 2002, p. 6).
- 2003** Pilot of *Action Schools! BC* initiative commenced. The program was developed in response to the inactivity and the rising obesity levels of children in BC. As of March 31, 2011, 91% (1 441) of the BC schools are registered in the program (Action Schools! BC, 2006).
- 2003-2006** The Ministry of Education worked with partners to revise the curricula to address health-related learning. The expectations for all students were clearly articulated to help teachers who are responsible for teaching these curricula (BC Ministry of Education, 2005, p. 6).
- 2004** The World Health Assembly adopted the "Global Strategy on Diet, Physical Activity and Health" (DPAS) in response to the growing burden of NCDs (noncommunicable diseases) and in order to reduce

the impact of major risk factors such as unhealthy diet and physical inactivity (World Health Organization, 2008, p. 1).

- 2004** The Honourable Tom Christensen, Minister of Education, advised school boards that he wanted to know their progress toward healthy choices in food for sale in schools (BC Ministry of Education, 2005).
- 2004** The Coordinating Committee of the Intersectoral Healthy Living Network was established to foster partnerships/collaboration between the different sectors (The Secretariat for The Intersectoral Healthy Living Network, 2005, p. 5).
- 2004** The Council of Ministers of Education, Canada (CMEC) and the Conference of F/P/T Deputy Ministers of Health (CDMH) endorsed the establishment of a Joint Consortium for School Health and a School Health Action Plan that address a variety of health, social and learning-related challenges of school-aged children and youth (PHAC, 2005).
- 2005** British Columbia, along with PEI, ‘jointly proposed the creation of an education/health consortium on health-promoting schools; this proposal resulted in the establishment of the Joint Consortium for School Health” (Pan-Canadian JCSH Annual Report, 2010), which is now supported country-wide.
- 2005** Integrated Pan-Canadian Healthy Living Framework - promoted positive choices about personal health practices such as healthy eating, not smoking, building a circle of social contacts, and staying physically active (Boyce, 2004, p. xiii).
- 2005** Health-Promoting Schools Forum in Vancouver
- Government of BC – goal of significantly improving the health of its citizens by 2010
 - “By adopting a health-promoting schools approach, the British Columbia school system [had] a unique opportunity to enhance the health and learning capacities of all British Columbian students” (BC Ministry of Education, 2005, p. 3).
- 2005** The Bangkok Charter for Health promotion is agreed upon at the 6th Global Conference on Health Promotion. “The Bangkok Charter [affirmed] that policies and partnerships to empower communities, and to improve health and health equality, should be at the centre of global and national development” (WHO, 2009, p. 24).

- 2005** British Columbia's Healthy Schools branch was established as a joint partnership between the ministries of Education and Health (now Healthy Living and Sport) (Pan-Canadian JCSH, 2009, P.13).
- 2005** BC Government launched ActNow BC – a health promotion initiative that [sought] to improve the health of British Columbians by taking steps to address common risk factors and reduce chronic disease (Government of British Columbia, 2010).
- 2005** BC School Fruit and Vegetable Snack Pilot Program was launched. The program [delivered] fresh fruit or vegetables once a week to participating schools. As of January 2011, the program served 1171 schools (Agriculture in the Classroom Foundation, 2008).
- 2006** The BC government in partnership with the BC Dairy Foundation and BC Agriculture in the Classroom launched the Fridges in Schools Program.
- 2006** The BC Healthy Schools Network (a component of the Performance Based Schools of British Columbia) was established to tackle the social, emotional, and academic concerns of students through the comprehensive school health approach. The Network began with 28 schools in 2006 and in September 2010 had 121 registered schools.
- 2007** BC Ministry of Education released the *Guidelines for School Food and Beverage Sales in BC*, requiring public schools to eliminate the sale of unhealthy foods and beverages to students (British Columbia Ministry of Education, 2007).
- 2007** Revisions made to *Canada's Food Guide*.
- 2007** The BC Provincial government required schools to provide 30 minutes of daily physical exercise and to fast track the removal of junk food in schools. The Province also introduced new legislation to ban tobacco use on school grounds. (BC Ministry of Education and BC Ministry of Tourism, Sports, and the Arts, 2007).
- 2007** British Columbia Ministry of Education released the draft Healthy Living Performance Standards, which provided formative assessment for the curricular area of Health and Career Education, Planning, Graduation Transitions, Physical Education and Home Economics (British Columbia Ministry of Education, n.d.a).
- 2008** BC Ministry of Education officially released the Healthy Living Performance Standards.

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|-------------|--|
| 2008 | CAHPERD becomes Physical and Health Education Canada (PHE Canada). |
| 2009 | After the threat of H1N1, the Ministry of Education, in consultation with the Ministry of Healthy Living and Sport, created the Pandemic Response Framework to be used as a guide for planning (British Columbia Ministry of Education, 2009). |
| 2010 | British Columbia Ministry of Education updates the Guidelines for Food and Beverage Sales in BC. |

Currently the focal point of school health promotion in British Columbia is the framework of the Comprehensive School Health (CSH) approach. The term “Comprehensive School Health” is based on the 1986 World Health Organization’s Ottawa Charter for Health Promotion (Joint Consortium for School Health, 2010). The next section reviews the CSH model.

2.5 Comprehensive School Health

The British Columbia Ministry of Education in collaboration with the Joint Consortium of School Health recognizes the term Comprehensive School Health, which is synonymous with Health Promoting Schools (Australia and Europe) or Coordinated Schools Health (United States). Specifically, Health Promoting Schools is a concept that has been a topic of interest internationally since the 1950’s (Edwards, Ward, & Heald, 2003). “Changes over the past 25 years have refocused health promotion in schools from an individual, behavioural approach to providing supportive social and physical environments” (Veugelers & Schwartz, 2010, p. S5). Historically, health education in schools was more classroom based (Veugelers & Schwartz, 2010); however, the HPS and CSH approaches require a substantial change in the way schools administer school health. For example, a lesson on healthy eating in the classroom can be reinforced with the BC School Fruit and Vegetable Nutritional program and a guided tour with a local nutritionist at a grocery store. This

approach to health promotion involves teachers, school staff, administrators, parents, and community members “so that pupils perceive congruent messages” (Stewart-Brown, S., 2001, p. 272). It is a holistic or a comprehensive way to support health promotion efforts of the entire school community. For a greater impact on the health of society, the health promoting school needs to be comprehensive and holistic, as depicted in the CSH framework (Figure 2.1.).

School Districts can improve their cost benefits with the Comprehensive School Health model. According to Alberta Learning (2002), CSH programs reduce illness-related downtime and build attitudes and behaviours that improve long-term health, thereby reducing future costs and expenditures. O’Rourke (2005) noted that if school health programs were only two percent successful in reducing unhealthy habits, such as smoking and sexually transmitted diseases, there would be a saving of over 480 billion dollars in the U.S. In an examination of CSH programs, Rothman et al. (1993) claim that the increased benefits with respect to the prevention of future morbidity were found to be 13.8 times the cost of the program.

The British Columbia Ministry of Education specifically encourages the four-component model of comprehensive school health: 1) Social and Physical Environment, 2) Teaching and Learning, 3) Healthy School Policy, and 4) Partnerships and Services

Figure 2.1. Comprehensive School Health Framework



Figure 2.1. From the “Comprehensive School Health Framework” by the Joint Consortium for School Health, 2011. Retrieved from http://www.jcsh-cces.ca/index.php?option=com_content&view=article&id=40&Itemid=62. Copyright 2011 by The Joint Consortium for School Health. Reprinted with permission.

2.5.1 Social and physical environment.

2.5.1.1 Social and physical environment for students.

A child’s environment can positively or negatively affect student academic performance and student health. In healthy learning environments, students are more safety conscious in their decision-making processes (PHAC, 2008a), they do better academically (Blum & Libbey, 2004), have higher test scores on standardized tests in schools (MacNeil, Prater, & Busch, 2009), do better in math and have higher reading skill development when

there is natural light in the classroom (Frumkin, Geller, Rubin, & Nodvin, 2006). Shields (2009), argues that for a trend reversal of obesity rates to occur, people must be exposed to social and physical environments that promote healthful habits. Thus, creating a positive social environment translates to a healthier lifestyle (Archambault, Janosz, Morizot, & Pagani, 2009) and has been linked to prevention of eating disorders when a school has an environment where students feel accepted (Keca & Cook-Cottone, 2005).

One element to the Comprehensive School Health approach, a positive school environment, helps to enhance young people's sense of social connectedness with teachers and peers (Schoen, 2005; Xin, 2007). Students in a positive school environment have better emotional health (PHAC, 2006) and there are fewer negative occurrences, such as drug use and depression in lesbian, gay, and bisexual students (Birkett, Espelage, & Koenig, 2009). A positive school environment is also associated with academic achievement and students' healthy development. (Cohen, McCabe, Michelli, & Pickeral, 2009).

School social climates where students are kind and helpful, and where students feel supported, reduce the likelihood of students being bullied (Cheng et al., 2010, PHAC, 2008), including, racial bullying (Larochette, Murphy, & Craig, 2010). Johnson (2009) notes that "schools with less violence tend to have students who are aware of school rules and believe they are fair, have positive relationships with their teachers, feel that they have ownership of their school, feel that they are in a classroom and school environment that is positive and focused on learning, and in an environment that is orderly" (P. 451). A poor social and physical environment, including school, family, socioeconomic, and peer-related factors, is associated with physical aggression (Pickett et al., 2009) and increased crime rates (Limbos & Casteel, 2008).

The indoor and outdoor school physical environment can positively or negatively affect the behaviour and development of children. The physical environment can be altered according to many factors such as cleanliness and spatial arrangement. From a sample of 71 schools, three design classifications - movement and circulation, day lighting, and views - were found to have a positive correlation to reading vocabulary, reading comprehension, language arts, mathematics, social studies, and science achievement outcomes (Tanner, C.K., 2009). Kumar, Omalley, and Johnston (2008) hypothesize an association between less negative behaviour, such as cigarette, alcohol, and marijuana use in schools with attractive physical environments.

A child's social environment includes not only school, but also the home situation. Supportive, loving, and caring families make a difference to a child's ability to cope with problems and their involvement in delinquent and anti-social behaviours (Jessor, 1991, Kiriakidis, 2010). With the support of families and community partnerships and services, schools can implement programs and initiatives that reduce risky health behaviours.

Creating a common culture of health was found to assist in consistency with the implementation of an effective health education program (Jourdan, McNamara, Simar, Geary, & Pommier, 2010). Effective programs are also beneficial to the health of teachers. In fact, many districts in British Columbia offer teacher wellness programs.

2.5.1.2 Teacher Wellness

The demands of the teaching profession can induce stress and burnout which have an effect on health, wellness, and the teaching-learning process (Skaalvik, & Skaalvik, S., 2007; Kokkinos, 2007; Betoret, 2006; Borg, 1991; & Zurlo, Pes, & Cooper, 2007). Workplace stress is defined by the Canadian Centre for Occupational Health and Safety as "the harmful

physical and emotional responses that can happen when there is conflict between job demands on the employee and the amount of control the employee has over meeting these demands” (Williams, 2003, para. 2). One of the common results of work-related stress or burnout is absences from work. The 2001 BCTF *Teacher Workload Issues and Stress Survey* reveals that the most frequently cited reasons for leaves are parenthood (29%) and illness or disability (35.5%) (Schaefer, 2001). Nearly half of the teachers who are on leave for reasons of illness or disability reported that their absence from work is stress-related. There are many reports on the connection to teaching and stress or burnout (Skaalvik, & Skaalvik, S., 2007, Kokkinos, 2007, Betoret, 2006, Borg, 1991, & Zurlo et al., 2007). The demands of teachers’ work load perhaps can be reduced by teacher wellness programs.

The CSH and HPS approach to health promotion encourages teachers to reflect on their own health. Teacher wellness programs have demonstrated benefits to teachers’ health and well-being. Teacher wellness programs might include rehabilitation programs, professional development, mentoring programs, district wellness initiatives, and health programs (Lauzon, 2003). In the United States, Bellevue (Washington) Public Schools, Dallas Independent School District (ISD), Lexington School District and Greenwood Area Schools in Millerstown, PA, report a variety of benefits the wellness program has had on their teachers’ behaviours and attitudes and their district’s bank account. All four school districts identify positive physical and nutritional changes and a transformation in attitudes towards a state of wellness (Oxreider, 1987; Pine, 1985; Wolford et al., 1988; Maysey, Gimarc, & Kronenfeld, 1990). Lexington School District No.2, in Carolina indicates positive changes in the areas of smoking habits, exercise, safety, nutrition, and stress and mental health areas (year one results).

Both Bellevue Public Schools and Dallas ISD mention lowered absenteeism rates among teachers, with Bellevue finding that absenteeism dropped from an average 4.19 hours annually to only 3.56 hours (first year results). Dallas ISD reveals that there were reduced insurance claims and announced a savings of \$425,000 in substitute teaching fees, with participating teachers using an average of three fewer sick days (Pine, 1985). The four districts report that their teachers are more positive and energetic after participating in the teacher wellness program. Bellevue Public Schools notice their teachers have an improved job performance and are more conscientious. Greenwood Area Schools indicate that their teachers are more interested in pursuing what they think is important, and more willing to work hard.

Employee wellness programs also have a positive effect on the health education of its members. Baranowski, Hearn, Baranowski, Smith, & Doyle (1995) introduced teachers to the TeachWell program that improves school health education by increasing teacher health, knowledge and motivation (Feuer, 1985). The researchers of this study indicate that living well is a learned behavior. In order to learn a new behavior, one must not only be introduced to it, but must adopt and apply that behavior to their daily life. Teacher wellness programs are effective for this reason because they encourage habit building with the help of a team of people. A further benefit observed through the TeachWell study is that teacher's enhanced knowledge and skills from participation in the program support positive student behavioural changes. An earlier study (Rescinow et al., 1998), however, found no evidence that the program modified teacher or student health behaviours.

2.5.2 Teaching and learning.

2.5.2.1 Student learning.

According to Alberta Learning (2002) the Comprehensive School Health approach benefits the brain function of learners through physical activity, which increases academic success. Students who experience success “believe they have options for the future” and “understand the value of good health” (Alberta Learning, 2002, p. 31). Evaluations of HPS and CSH programs reveal impressive gains in decreased risk behaviour incidents in students. Smoking rates were significantly lower in a major study performed in Scotland secondary schools (West, Sweeting, & Leyland, 2004) and other studies have demonstrated similar improvements (Perry, Kelder, Murray & Klepp, 1992). Research revealed HPS and CSH efforts increase positive behavioural changes with diet (Luepker et al., 1996) and physical activity levels (Kelder, Perry, & Klepp, 1993). Delaying the onset of alcohol use has proven to be another benefit of the CSH program (Perry et al., 1996). Lastly, students in Health Promoting Schools have more satisfaction with their schooling (Boyce, 2004) and have better relationships with teachers (Samdal et al., 1998) and parents (King et al., 1992 in Pickett, Garner, Boyce, & King, 2002).

2.5.2.2 Green schools.

The Comprehensive School Health approach encourages many initiatives and programs that improve the environment, such as conservation and protection, and purchasing, eating, and growing locally. In April, 2009, the BC government released an Energy Plan report aimed at encouraging British Columbians to take responsibility for their climate and environment (BC Ministry of Education, n.d.b, para. 1). Green schools are beneficial in that they increase environmental awareness, social behaviour and relationships, and safety and

health (Dyment, 2005). Dyment and Bell (2008) explored the relationship between green school grounds and school-based health promotion. They found evidence that green school grounds improve student physical, mental, social, and spiritual well-being.

2.5.2.3 Teaching preparedness.

In the United States, health education is a distinct profession (Taub, Allegrante, Barry, & Sakagami, 2009). But in elementary schools in British Columbia, regular classroom teachers are positioned as ‘health experts’ (Evans & Davies, 2004). Teachers, however, are not always adequately prepared to teach high quality health education (Peterson, Cooper, & Laird, 2001), which means that the health education needs of students are not being met. Sundwall (2001) describes teachers’ meagreness at teaching health education:

We find much waste in school health because the interests and activities concerned are under the direction of the unskilled that, therefore, cannot plan for and put on comprehensive, constructive, balanced, and integrated programs of school health. (p. 363)

While Health and Career Education are mandated curriculum in the BC IRP (British Columbia Integrated Resource Package, 2006), elementary teachers are not always skilled in this area and often don’t have the necessary training, resources, and professional development to give quality instruction and create adequate assessment tools.

According to the literature (Hausmann & Ruzek, 1995; Morgan & Bourke, 2005) because of lack of training and preparedness, there is widespread discomfort with teachers at the beginning of their career when teaching health education content. Hausmann & Ruzek (1995) and Morgan & Bourke (2005) found that teachers’ self-reported confidence with teaching health education was consistent with their training. “Preparing pre-service teachers

with adequate coursework before they enter schools to teach is a critical need” (Ubbes et al., 1999, p. 17). Teachers already in the workforce need to be provided with professional development opportunities for health education and promotion (Smith, Potts-Datema, & Nolte, 2005; Vamos & Zhou, 2009b).

Current research reveals the importance of pre-service and in-service teacher training to increase health education competency levels and improve teaching school health outcomes (Vamos & Zhou, 2009). In British Columbia, there are no standardized guidelines that require pre-service teachers to receive health education training (Vamos & Zhou, 2009). Teacher training and professional development in the area of healthy schools is minimal (Boyce, 2004), and the result is that “the promise of a coordinated school health program outshines its practice” (Marx, Wooley, & Northrop, 1998, p. 10). In other words, teachers do not have the time or training to properly put excellent programs into practice (WHO, 1996). Furthermore, teachers sometimes feel pushed to teach programs when they have no interest in the content. Retention is low when this is the case (WHO, 1996).

2.5.3 Healthy school policy.

“Policies that support health in schools are a cornerstone of all CSH models” (Veugelers & Schwartz, 2010, p. S6). Healthy school policies, such as, guidelines for food and beverage sales, crime prevention (National Crime Prevention Centre, 2000), and the school tobacco control policy (Baillie, Lovato, Taylor, Rutherford, & Smith, 2008) address a wide variety of the health needs of students. Healthy school policies are suggested to assist with preventing the onset of smoking (Huang et al., 2010; Leatherdale & Manske, 2005) and reducing the numbers of overweight children in schools (Leatherdale, 2010). On the other hand, Maea & Lirvens (2002) found very little evidence in support of student behavioural

changes due to healthy school policy. There is a limited amount of research in the area of healthy school policy and behavioural changes of students.

Schools need support with building policies in health education (Jourdan, McNamara, Simar, Geary, & Pommier, 2010) as they do not always exist; yet, “school health policies are the clearly defined and broadly promulgated directions that influence the school's actions and resource allocation in areas promoting health” (Lee, Frances, Cheng, & St. Leger, 2005, p. 184). School policies guide the healthy schools program, as does support from the community, teachers, administrators, and the district. Many barriers experienced by schools and their districts result from “poorly developed capacity of provincial health and education agencies to help their districts and schools implement effective school health programs” (WHO, 1996-B, p. 3).

Healthy schools policies should be carefully planned (Deschesnes et al., 2003) and implemented in such a way that the initiatives and programs maintain participant satisfaction (Butterfoss et al, 1993). According to Tones (in Clift & Jensen, 2005) the ‘formula’ for achieving major changes in health promotion is “Health Promotion = Healthy Public Policy x Health Education” (p. 28). Education needs the support of public policy and conversely, education supports many public policies with their implementation (i.e., wearing seatbelts, substance prevention, etc.). Programs and initiatives paired with policy to support their implementation and retention is important to a healthy school. Different schools will develop different policies, but it should be a continuing process that enables all members of the school community to sustain the school’s health policies over time (Barkenow et al., 2006).

2.5.4 Partnerships and services.

The last pillar of the CSH approach, Partnerships and Services, encompasses all associations that facilitate health and well-being; for example, families, community organizations, and the health sector. “Services” refer to the health services provided for a student who has specific health needs. Universities, RCMP, local health authorities, Parent Advisory Committees, and ski programs are all examples of different “partnerships” in health. When relationships are created with caring partnerships, students can expand their knowledge of health-related topics, and become connected with people that can help in their growth and development, and schools are able to maximize their capacity to meet the needs of all students (Veugelers & Schwartz, 2010). Thus, it is an entire school and community that work together to plan and deliver education, programs, community connections, and positive environments.

From a business perspective, benefits provided to partners by collaborating with schools include: “capturing additional funds, resources, and in-kind benefits; motivating students and staff; improving delivery of services to students; delivering on mission and vision statements; and developing local and global communities” (Lewis, 2010, p. xvii-xviii). Additionally, researchers found significant changes in student knowledge and physical activity levels due to a partnership between researchers, schools, and community organizations developed throughout a two year study (Benamins & Whitman, 2010). Blom-Hoffman et al. (2008) discovered a positive correlation of increased vegetable and fruit intake with family-school collaboration; however, collaboration did not alter the accessibility and availability of fruits and vegetables at home. The researchers propose that major

environmental changes would need to occur, such as supermarket availability and food pricing, to improve fruit and vegetable availability and accessibility.

As noted in the Teaching and Learning section, most elementary schools in British Columbia do not employ a specialist to give physical education (PE) instruction to students; it is the regular classroom teacher who provides this instruction. One solution to providing high quality PE instruction is to have universities partner with elementary schools to assist with conducting educational instruction and fitness assessments (Petray & Hill, 2009). Partnerships with universities are also suggested to help prepare students for careers in the field of health (Iver, Abele, & Farley, 2005).

In Greece, Soulatou & Duncan (2009) explored building partnerships at the school level. Among other things, the study found that partnerships imposed by administrators and school web designers were not effective regarding health education curriculum. The tension of working together in a top-down partnership without collaboration, evaluation, and on-site monitoring led to uncontrolled situations, such as marginal parental engagement and lack of support from local authorities. Soulatou & Duncan describe their study metaphorically: “the concept of partnerships was found to be injected as an alien body into Greek secondary education, to the extent that the existent school culture aborted it” (p. 41). Therefore, partnerships that include student and teacher voices should greater sustain their working relationship.

Lack of support for the Health Promoting Schools initiative at the district level can be a result of financial prioritization. In a U.S. study, the top five priorities raised by superintendents were related to school finances (Winnail & Bartee, 2002). Governments and districts will not always choose health promotion for funding when increased scores of

numeracy and literacy are viewed as a top priority. Similar to governments and districts, communities do not always perceive health promotion programs and initiatives as a priority for schools (WHO, 1996). St. Leger (1999) notes that the “difficulty stems from working relationships [as] labour intensive and involve a great deal of understanding of the work site, customs and institutional requirements of each partner” (Boyce, 2004, p. 5). Teachers and community partners and services do not always feel like they have the time or resources for collaboration (Boyce, 2004). Lee, Tsang, Lee, & To (2003), identify pre-service teacher training as an indicator of success for community partners; after training, teachers will have a better understanding of how community partnerships might work.

Despite the government’s promotion of these concepts and funding in support of a comprehensive approach to health promotion it is only partially recognized in schools. In other words, there is diversity in the level of implementation of the Comprehensive School Health approach in BC schools. In their study of a Health Promoting School Approach in Quebec, Deschesnes, Trudeau, & Kebe (2010) discovered that “the presence of leaders within schools” (p. i) is a key attribute that contributes to the discrepancy between the adoption of a HPS approach. Indeed leaders can help or even harm the implementation of the HPS approach.

2.6 Healthy Schools Network

Four years ago, the BC Healthy Schools Network (HSN) (a component of the Performance Based Schools of British Columbia) was established to tackle the social, emotional, and academic concerns of students through the Comprehensive School Health approach (BC Ministry of Education, 2010). The benefit to schools to be members of the HSN is to utilize the leadership and resources provided by the Directorate of Agencies for

School Health of British Columbia (DASH BC) (Healthy Schools Network, n.d.). DASH BC is “committed to making a significant contribution toward positively influencing the health and learning capacity of students in British Columbia” (DASH BC, 2010). DASH BC and the HSN encourage school communities to embrace the Comprehensive School Health approach and to strive to improve the health status of their community. Although the Network has grown from 28 schools in 2006 to 121 schools in 2010, British Columbia still has another 2275 schools in the province yet to become active members. Research in the area of the British Columbia Healthy Schools Network did not emerge from the extensive literature search with the exception of an SFU graduate thesis addressing the HSN as a resource for BC healthy schools (Zibrik, 2007).

2.7 Early Development Instrument

The Early Development Instrument (EDI) was developed by Dr. Dan Offord and Dr. Magdalena Janus at McMaster University (The Offord Centre for Child Studies, 2004). In 1999/2001, Clyde Hertzman (director of the University of British Columbia’s Human Early Learning Partnership (HELP), and professor at UBC’s School of Population and Public Health), led the development of British Columbia’s implementation of the EDI in some school districts. By 2009/2010, the EDI was being administered to students in all school districts in BC. The purpose of using the EDI as a diagnostic tool is to provide early screening and interventions for regions with concerns related to school readiness (Janus et al., 2007).

One component of the EDI provides teacher ratings of children’s behaviour and capabilities in physical health and well-being (Human Resources and Skills Development Canada, 2009). Forget-Dubois et al. (2007) discovered that Physical Health & Well-Being

significantly predicted achievement one year after the EDI was administered. One study revealed that lower Physical Health and Well-Being outcomes are in direct correlation with a low income rate (Lapointe, Ford, & Zumbo, 2007). Human Resources Development Canada (2003) conducted a study in Abbotsford, BC to determine whether the child was living in a two-parent or single-family home and whether the father was working outside of the home as the most important variables that influence physical health and well-being. The study also found family income and the father's level of education as predictors of increased risk.

The Early Development Instrument considers the link between schools and the community by connecting the outcomes of a community's actions and policy planning to prepare children for school. The community's ability to prepare a child for kindergarten has important implications for their academic achievement in school (Lemelin et al., 2007; Lesaux, Vukovic, Hertzman, & Siegel, 2007; Lloyd & Hertzman, 2009) and their well-being (Janus and Offord, 2007). It has been utilized in some studies (Human Resources Development Canada, 2002; Willms, 2003) to assess early child development in Canadian communities, such as Prince Albert, Saskatchewan (Willms, 2002). Results of a study performed by Lloyd and Hertzman (2010) established the link between a community's socioeconomic conditions and a child's cognitive and language development in kindergarten, while Cushon, Vu, Janzen, & Muhazarine (2011) found a connection between a child's neighbourhood and school readiness over time. To summarize, the Early Development Instrument is a tool that measures the degree to which communities successfully foster the healthy development of their children, including their physical health and well-being. Communities that resulted in achieving ratings in the "low" and "lowest" vulnerable of the

EDI demonstrated greater resilience in supporting children's development (Janus et al., 2007). Chapter 1, Section 1.1 fully described the school-community link.

2.8 Thematic Analysis

For educational researchers, thematic analysis is a common research tool used for data analysis (Cooper & Mackenzie Davey, 2011; Simon, Campbell, Johnson, & Stylianidou, 2011; Marwan & Sweeney, 2010; Subramaniam, 2010). Thematic analysis is “a method for identifying, analysing, and reporting patterns (themes) within data” (Braun & Clark, 2006, p. 81). It helps to organize, describe, and interpret (Boyatzis, 1998) a data set in substantial detail. Themes emerge as a researcher makes sense of the data.

Researchers examining the Health Promoting Schools model have examined the factors that characterize effective school-community partnerships (Thomas, Rowe, & Harris, 2010). Through the use of thematic analysis, Thomas, Rowe, & Harris determined four factors in establishing a strong partnership: a focus on building relationships between school and community partners, complementary capacities of school personnel and service providers, commonality of intent and shared goals between both parties, and competence of practice, primarily of the community service provider (p. 427). Studies have also been conducted applying thematic analysis to determine health-related needs on policy design and curriculum ratification (Soultatou, Duncan, Athansiou, & Papadopoulos 2011), and to determine the facilitators and barriers in partnerships to a national school health curriculum (Soultatou & Duncan, 2010).

Additionally, educational researchers have employed thematic analysis as the methodology for studies using the World Wide Web. For example, Wright (2010) examined using micro blogging in the form of Twitter as a way to reflect on practice during teacher

training. Thematic analysis was employed to extract tweet categories, such as pedagogy & relationships. Email exchanges between student and pre-service teachers involving conversations about a book (Wilson, 2010), and teacher-student relationships throughout a distance education course (Bergstrom, 2010), were analyzed using thematic analysis to understand the roles and discourse of teachers and their students.

2.9 Content Analysis

2.9.1 Content analysis defined.

Content analysis is distinguishable from other research tools by its method of analysing texts within the contexts of their uses. “The content analyst views data as representations not of physical events but of texts, images, and expressions that are created to be seen, read, interpreted, and acted upon for their meanings, and must therefore be analyzed with such uses in mind” (Krippendorff, 2004, xiii). This research type can vary within the methodology of content analysis, including both qualitative and quantitative analysis.

Content analysis is “a primarily *quantitative* type of formal textual analysis involving the systematic categorization and counting of recurrent elements in the form or content of texts” (Chandler & Munday, 2011). Quantitative content analysis consists of a word count which determines the frequency of key words (e.g. “tobacco,” “always,” and “support.”). Singleton, Straits, & Straits (1993) warn researchers to not assume that each individual frequency count is of equal importance, value, or intensity. While acknowledging that frequency alone does not always reflect importance, a qualitative analysis can also be performed that involves an interpretive examination of the patterns and relationships in each of the themes or categories.

Unlike quantitative content analysis, with a focus on numbers, qualitative content analysis looks at the “big ideas.” In other words, the qualitative format interprets the content within the context of the text. Qualitative content analysis:

- [Requires] a close reading of relatively small amounts of textual matter, and
- [Involves] the rearticulation (interpretation) of given texts into new (analytical, deconstructive, emancipatory, or critical) narratives that are accepted within particular scholarly communities that are sometimes opposed to positivist traditions of inquiry. (Krippendorff, 2004, p. 17)

Thus, the qualitative analyst depicts meaningful records of textual information that give the analysis more strength than a simple word frequency count.

2.9.2 Previous studies.

Content Analysis has been used as a methodology for the analysis of data with research in the area of Health Promoting Schools. Two examples offered by Tjomsland (2010) and Tururen, Tossavainen, & Verito (2004) amplify this analysis.

Tjomsland (2010) examined a Norwegian elementary school while enrolled in the European Network of Health Promoting Schools (1993-2003) and in the Norwegian Physical Activity and Healthy Meals Project (2004-2006). The case school was chosen because it was listed by a Health Promoting Research Center as the most outstanding school in the network. The school’s goal for health during the study was increased physical activity. As part of the health promoting school program, a goal is chosen as a “strategy to improve school satisfaction and health among students” (Tjomsland, 2010, p. 78). Like in British Columbia, the Norwegian HPS is a joint collaboration between the Ministry of Education and the Ministry of Health. This study utilized a mixed methods approach, including a focus group

and a content analysis of school documents that included the school website. The school documents demonstrated that physical activity remained a focus during the ten-year period. The study revealed that the “health promoting school concept became the umbrella for the school’s practice” (p. 82). Furthermore, the approach yielded the result of sustainability and support for a health goal over an extended period of time.

In the second example, Tururen, Tossavainen, & Verito (2004) described the “reality in which health promotion processes take place” in the Finnish European Network of HPS by performing a content analysis of critical incidence documents (p. 419). Data was collected in 30 schools asking representatives to record both positive and negative critical incidences in their school community. The data was analyzed using inductive content analysis, whereby the incidences were read thoroughly to understand the contents and then put into categories. This method proved to be useful in collecting data on health promotion implementation results, such as critical incidents that reflect a positive change in school health and the organizational culture.

2.10 The Internet for Research and Communication

2.10.1 Content analysis and the Internet.

Content analysis using the World Wide Web became available with the introduction of the first Web browsers in 1993 (Leiner et al., 2000). Using internet search engines, such as Google & Yahoo!, researchers have performed studies examining photographs on websites (Ribisl, Lee, Henriksen, & Haladjian, 2003), web newspapers (Massey & Chang, 2006; Tasdemir & Zafer, 2011), and video-based classrooms (Ugur, 2008). The Internet has been used as a method for education researchers performing content analysis with health education (Ostry, Young, & Hughes, 2007), and for researchers interested in how content on sites can

attract Internet users to school websites (Yolcu, 2011). Jose & Lee (2006) explored how information is disclosed on the Internet by performing a content analysis of corporate websites and Stout, Villegas, & Kim (2001) used the Internet as a tool to conduct research to examine links between health-related websites and health promotion.

McMillan (2000) lists five steps in performing content analysis using the Internet:

1. Formulate research questions and/or hypotheses,
2. Select a sample,
3. Define the categories,
4. Train coders and check the reliability of their coding skills,
5. Analyze and interpret data. (p. 85)

McMillan advises researchers to consider this format when performing content analysis utilizing the Web to avoid potential problems, such as the diversity in people's interaction with the Web, how frequently content on websites change, and ensuring inter-coder reliability.

The validity of websites as a methodological tool has been evaluated by some researchers. For example, Gozling, Vazire, Srivastava, and John (2004) studied preconceptions about Internet samples and data quality by comparing an Internet sample with a published traditional sample - the *Journal of Personality and Social Psychology*. The researchers concluded that the findings on the Internet were consistent with traditional methods. Correspondingly, Birnbaum (2004) discovered that methods using the Internet yielded similar responses to traditional research methods. A benefit to performing research on the Web is that the accessibility of the Internet allows data collection from samples that may otherwise be unreachable (Mutanski, 2001). Another advantage to utilizing the Internet

as a research tool is that it may save time for the researchers when there are distances between geographical locations of the populations (Wright, 2005). A limitation to using the Internet for analyzing populations is that the researcher has no direct contact between the researcher and the school. However, it also has a positive impact in that the lack of direct contact between the researcher and his/her subject reduces the chances of researcher bias (Bonham, Beichner, Titus, & Martin, 2000).

2.10.2 The Internet as an educational and communication tool.

Schools are increasingly “investing considerable time and resources into the development and maintenance of school websites, in order to promote their school and communicate not only with their school community, but also with members of the public” (Maio-Taddeo, 2007, p. 103). School websites can be used for ‘branding’ a school’s image or as a marketing tool that reaches groups, such as parents and prospective students (Opoku, Abratt, & Pitt, 2006; Tubin & Klein, 2007). In their study examining 150 school websites, Hesketh & Selwyn (1999) found that some schools believed that the website is recruitment-based, while other schools understood the educational and communication values of the school website. The researchers also discovered a considerable difference between schools’ involvement in the Internet. Some schools demonstrated a commitment to the computer age, or obviously spent time developing and maintaining their sites. Other schools appeared to have websites with very little developed content and features. An examination of school websites determined that web content and design is determined by the skills of the Information communications technologies leader or leaders in the school (Maio-Taddeo, 2007).

The school website has the potential to be a useful tool for teaching, learning and communication. One factor that strongly affects student success is home-school communication (Ramirez, 2001). Schools have the potential to create better parental involvement in the health education of their children via communications from websites. Findings from a 2001 survey of 754 youths reported that 41% of the students used email and instant messaging to contact classmates or teachers about school assignments, 34% of them downloaded a study aid, 58% used websites specifically set up for their school or class, and 17% created a web page for a school project (Lenhart, Simon, & Graziano, 2001). Twenty eight percent of parents in the study also used email to communicate with their child's teacher.

The Internet is considered an educational tool for health education throughout the province. For example, Health and Career Education 8 and 9 can be accessed through Open School BC for online learning. They have the regular course content and also extra links to information students can access to better understand the healthy living and career education content. The Internet is an excellent resource for education and communication:

Among the tools of instrumental modernization of the system of education, the most promising, when it comes to creating an open civil society with a well-developed system of horizontal communications and creating the conditions that are necessary for a new pedagogical culture in the schools and passionate creative endeavour on the part of schoolteachers, is the *system of Internet communication*, with vast instrumental opportunities for the use of Internet resources in the teaching and learning process. (Ovsiannikov & Monakhov, 2007, 63)

Schools need to make a commitment to provide Internet access for students and teachers in order to keep up with current standards and societal progress. Access to the Internet has increased dramatically within schools (Tubin & Klein, 2007), which means the accountability of school websites as a tool for teaching and learning should be challenged. It is also the overall presentation of web-based content that maintains the students and parents' interest in the website. The impact of this opens up new questions regarding the importance of student involvement in the development of newsletters and websites for promoting a healthy lifestyle. To conclude, schools should consider what the presence of a school website can do to foster the teaching and learning capacity of their students.

2.10.3 Objectives and motivations to website design.

With schools under pressure to produce quality educational systems, the impact of information technology to distribute information and to increase user satisfaction exists. Tubin and Klein (2007) suggest that schools should integrate the website as part of their strategic plan to market the school's image and accountability. Zhang, Small, von Dran, & Barcellos (1999) investigate user satisfaction with a website. They "believe that the underlying goals for creating a motivating website are similar to those for creating a motivating workplace: to provide the conditions and environment that maximize user (employee) satisfaction and allow them to focus on and achieve high task performance" (p. 4). Their theory can be applied to the development of school websites. For example, if a school has good working conditions - adequate lighting and furniture for example - , students have the "tools" they need to be creative and learn. Similarly if their website is in good working condition it will have good brightness of screen/pages, and people will consistently be able to access the site (Zhang, et al., 1999).

The researchers also compared policy and administration to the length of a page's loading or response time, access restrictions, and data confidentiality. Interpersonal relations at a school were compared to the user's credibility (the web designer's attitudes and perceptions). Indication of the purpose of the Web site, availability of the Web designer for more information (e.g. email), simple and clear directions for using the website, and navigation aids were compared to supervision in a workplace. The degree to which users control access to information on the site equates to responsibility in the work environment; learning new skills from accessing the site is similar to advancement and growth, whereas task completion on the site is comparable to achievement in the school environment. Lastly, the quality of the information content was compared to work related tasks. Good quality content is equivalent to tasks that are interesting, challenging, and fun.

2.10.4 Summary.

To summarize, how a school operates in general can be compared to what a school strategically places on their website. Worldwide, some 1.97 billion people now use the Internet (Internet World Stats, 2010). With an increasing number of users of websites, it may be advantageous for schools to deliver their messages, policies, and curricula to parents, students, and community site users through this medium. Identifying which web features are helpful and more important than others will assist school web designers in creating a satisfying website for their student population. It is useful to note that one important function of websites is to market the school's image and culture. Therefore, schools could specifically define their culture of health by means of their school websites.

3.0 Methodology

3.1 Chapter Overview

This chapter provides an overview of the research methodology, including the study design, research objective, research reliability, pilot test, sampling, data source, data collection, data management, and data analysis.

3.2 Study Design

Content and thematic analyses of three school websites in the province of British Columbia were conducted to determine attributes of Health Promoting Schools, and to explore how health messages are presented to the public via school websites. The three elementary schools that were used in the sample demonstrated a commitment to health promoting schools practices with their extended membership in the British Columbia Healthy Schools Network. They joined the HSN in 2006/2007 and remain active members. The schools were also categorized as “low” and “lowest” vulnerable in the section of physical health and well-being of the Early Development Instrument (See Appendix B), meaning that the children at these schools demonstrated better health and well-being associated with the community’s ability to foster healthy development. The schools in this study were also required to have a school website.

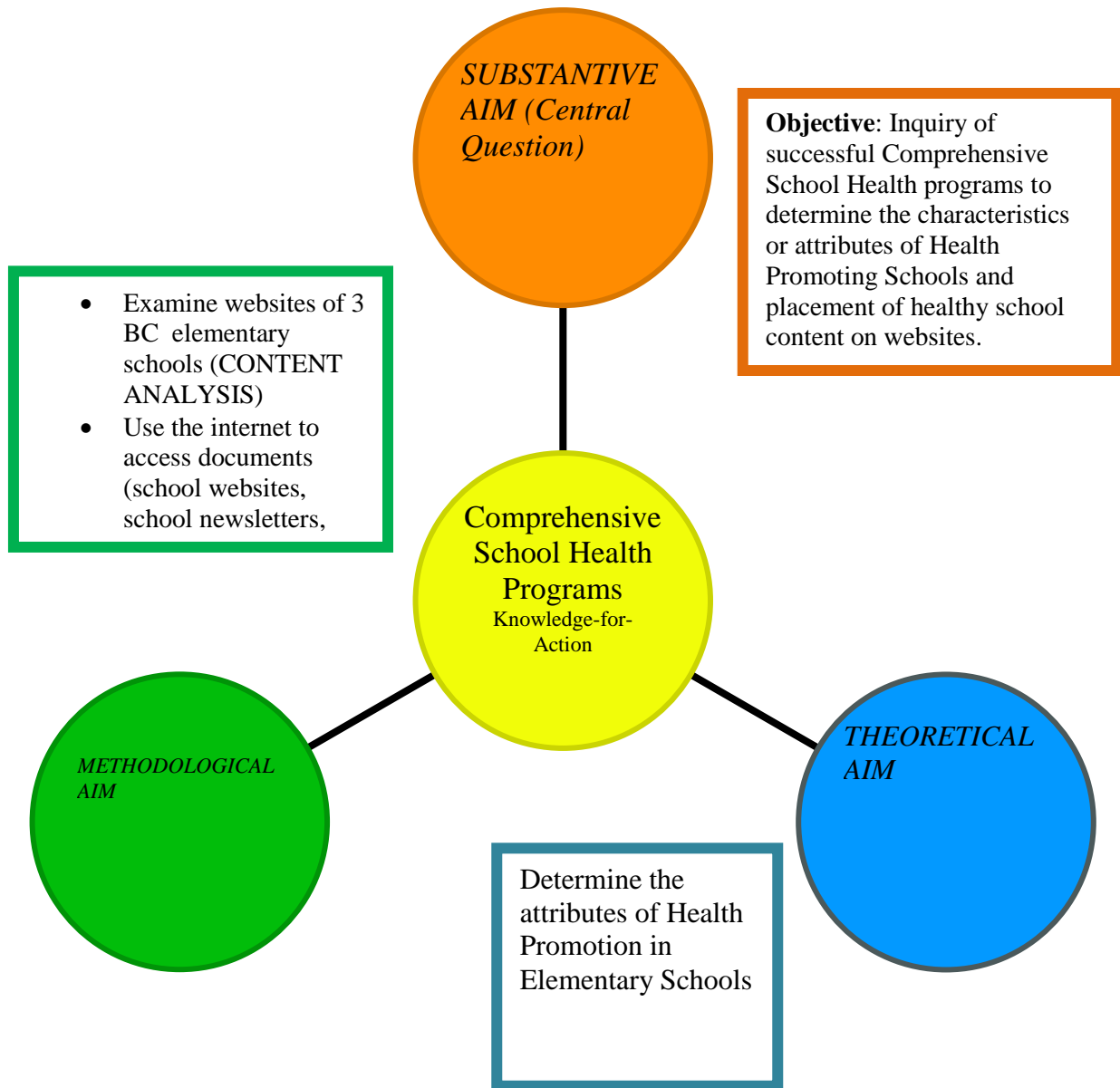
The study consisted of four phases: In phase one, a pilot study was executed which resulted in a tool for the quantitative analysis. Two coders were trained to perform the first and second phases of the study which consisted of a content analysis of the school websites. In the second phase, coders examined three school websites for all words and sentences related to health promotion in the four categories of the Comprehensive School Health framework: Social and Physical Environment, Teaching and Learning, Healthy School

Policy, and Partnerships and Services. The data was recorded in two forms. The first was a word frequency count (quantitative content analysis) which was statistically analyzed to determine the most common words used on web pages. The second was a record of all sentences (qualitative content analysis) pertaining to healthy schools. The third phase of the study included the researcher performing a thematic analysis of the qualitative data to generate themes revealing attributes of Health Promoting Schools. Phase four included an analysis of the locations of healthy schools terms on the websites to determine how health messages were revealed to the public.

3.3 Research Objective

The substantive, theoretical, and methodological objectives of this study were twofold: to analyze British Columbia elementary schools to determine attributes of health promoting schools by examining healthy school words and sentences on school websites, and to analyze where healthy school content was placed in a school website (i.e. newsletters and home pages) to determine how health messages were being communicated to the public (See Figure 3.1.). The school website has increasingly become a tool for schools to promote themselves and to communicate to parents, students, and community members (Maio-Taddeo, 2007). Thus, content and thematic analyses were employed to determine if the commitment to the CSH approach is consistent with the school's health messages published on their websites.

Figure 3.1. Research Conceptual Framework



*Figure 3.1. Conceptual framework outlining course of action for inquiry. Visual created by Melissa A. Jacobs in August 2009; revised November 2011. Heading ideas adapted from *Teaching & Learning*, by L. Poulson and M. Wallace, 2004, pp. 23-45.*

3.4 Reliability

According to Neudorff (2002), “given that a goal of content analysis is to identify and record relatively objective (or at least intersubjective) characteristics of messages, reliability is paramount” (p. 141). Neudorff (2002) remarks that content analysts can achieve reliable data by having agreement among two or more coders. The study design included the researcher and two coders (three coders in total) who were individually trained to facilitate accurate content analysis. They were instructed how to carefully examine each page and look for healthy school words. The coders read the Joint Consortium for School Health document (Appendix A.) defining each of the four categories of the Comprehensive School Health framework to assist with a unified understanding of the categories and to avoid “coder’s preconceptions in the analysis” (MacQueen, McLellan, Kay, & Milstein, 1998, p. 33). In addition, a pilot test was completed using a British Columbia school website not included in the population sample. The pilot ensured the coders had clarification and further instructions as necessary. When the reliability levels in the pilot test were adequate, with the minimum level of acceptance for intercoder reliability being a coefficient of .80 (Lombard, Snyder-Duch, & Bracken, 2003), the researcher and coders performed content analysis on the three schools. Additionally, a hard copy of every window was printed from all three websites to ensure consistency of data intended for coding. Lastly, the content analysis took place from December 20th to December 31st, 2010. McMillan (2000) reported the shortest data collection period utilizing the Web was two days and the longest was five months; therefore, the researcher chose a short time-frame. Ten days ensured fewer changes had occurred during the research process because, unlike printed material, “Web sites never *stand still*” (Krippendorff & Bock, 2009, p. 43). Also, data collection was done during a time when the

schools were closed for winter holidays thus ensuring little, if any, changes being made to the websites.

3.5 Pilot Test

In phase one, the Pilot Test content analysis was performed on December 19th, 2010. Three coders, including the researcher, executed a qualitative and quantitative content analysis with a randomly chosen elementary school in the province of British Columbia. The school did not meet requirements for the criteria for sample selection in the main study, since it was not a member of the Healthy Schools Network of British Columbia. The researcher trained the coders before commencing the pilot, which included reviewing the following documents:

1. Chapter 3.0. Methodology
2. Appendix A. (Which is an explanation of the four pillars as outlined by the Joint Consortium for School Health; supported by the British Columbia Ministry of Education)
3. Qualitative Content Analysis Data Collection Tool (see Appendix C.)
4. Quantitative Content Analysis Data Collection Tool (see Appendix D.)

On December 19th, 2010, the researcher and coders collected data for the study, completing both qualitative and quantitative content analyses of the randomly selected elementary school website. The coders emailed the data to the researcher to analyze and determine results.

The completed data analysis of the coded content analysis combining both the researcher and the coder's data revealed a coefficient of 77.42 % (24 out of 31 ratings agreed), just under the suggested coefficient of 80% (Lombard, Snyder-Duch, & Bracken, 2003). However, the researcher continued with the lower coefficient knowing that modifications to the main study using a word usage tool would likely increase the coefficient

to .80 or higher. As previously noted, the pilot revealed a need for a common scale for word usage. There was a discrepancy between the techniques used by the researcher and the coders. For example, one coder considered “support,” “supportive,” & “supports” as one term; whereas, another coder deemed the words to be three separate terms. Therefore a template of common words was created for the study’s use (Appendix D). One issue derived from the pilot was that one of the coders could not access a link on the site, while the others could. Therefore, for consistency reasons, the main study was performed using a hard copy of the website’s pages printed off by the researcher. Coders could work from the websites, but were required to compare their page online to the hard copy.

3.6 Sampling

The sample consists of all healthy school content found on three British Columbia elementary school’s websites. The three elementary schools were selected following a procedure consisting of three stages: (1) fifteen schools were chosen based on their extended commitment to the Healthy Schools Network from 2007/2008 to 2010, (2) four schools were selected according to their location in communities that foster the healthy development of their children evidenced by the Early Development Instrument (EDI), and (3) school websites were confirmed, narrowing the sample to three schools, as one school did not have a website.

3.6.1 Stage one.

Stage one consisted of purposive sampling, “the process of selecting a sample that is believed to be representative of a given population” (Gay, Mills, & Airasian, 2009, p. 134). In purposive sampling, the researcher selects the sample using previous experience and knowledge. Hence, schools in the Healthy Schools Network of British Columbia were chosen

as sample criteria due to the researcher's previous experience with the HSN. In other words, the researcher knew that the requirements to sustain a membership entail a school-wide commitment to a healthy schools goal. School goals are proven to influence both student motivation in a school subject (Bruenger, 2009), and teachers' attitudes toward professional development (Sullivan, 2010). Therefore, school-wide goal setting via the Healthy Schools Network should lead to positive changes in the health behaviours and attitudes of schools.

Since no formal data existed identifying how many elementary schools in British Columbia were members of the Healthy Schools Network of BC, the sample was obtained from a search of the DASH BC website performed on September 15, 2010. The Google search engine was used for all searches in this study. In stage one, schools were selected by the following criteria:

1. Must be in British Columbia, Canada
2. Have been members of the British Columbia Healthy Schools Network since 2006/2007 and remain active members
3. Must be an elementary school

Schools will be excluded if they:

1. Are not members of the BC Healthy Schools Network
2. Joined later than 2007/2008 school year
3. Are not middle or high schools

Fifteen schools met the above requirements.

3.6.2 Stage two.

In the second stage of sampling selection, the number of schools was narrowed to four by utilizing the Early Development Instrument (EDI). The EDI is an instrument that

measures the state of a child's development as they enter Kindergarten (Human Early Learning Partnership, 2011). Four of the fifteen schools were located in the regions categorized as "low" and "lowest" vulnerable in the section of Physical Health and Well-Being of the EDI (see Figure 3.2.). The Physical Health and Well-Being category was used as a determinant of the success of communities to prepare students for the physical challenges of school. For example, children that are the least vulnerable should enter kindergarten well-nourished, well-rested, and physically capable of age-appropriate activities. The EDI considers the link between schools and the community by connecting the outcomes of a community to prepare children for school. Healthy schools programs are more effective when partnered with the community (Flower & Chodkiewicz, 2009; Howie, Lukacs Pastor, Reuben, & Mendola, 2010; Roth & Brooks-Gunn, 2000; Smibert, Abbott, Macdonald, Hogan, & Leong, 2010). The influences of the communities within which the three schools in this study are located have fostered positive health and well-being outcomes according to the EDI. Therefore, the diagnostic tool was utilized to delimit the number of schools in the sample with the assumption that healthy schools exist in healthy communities.

Figure 3.2. Early Development Instrument

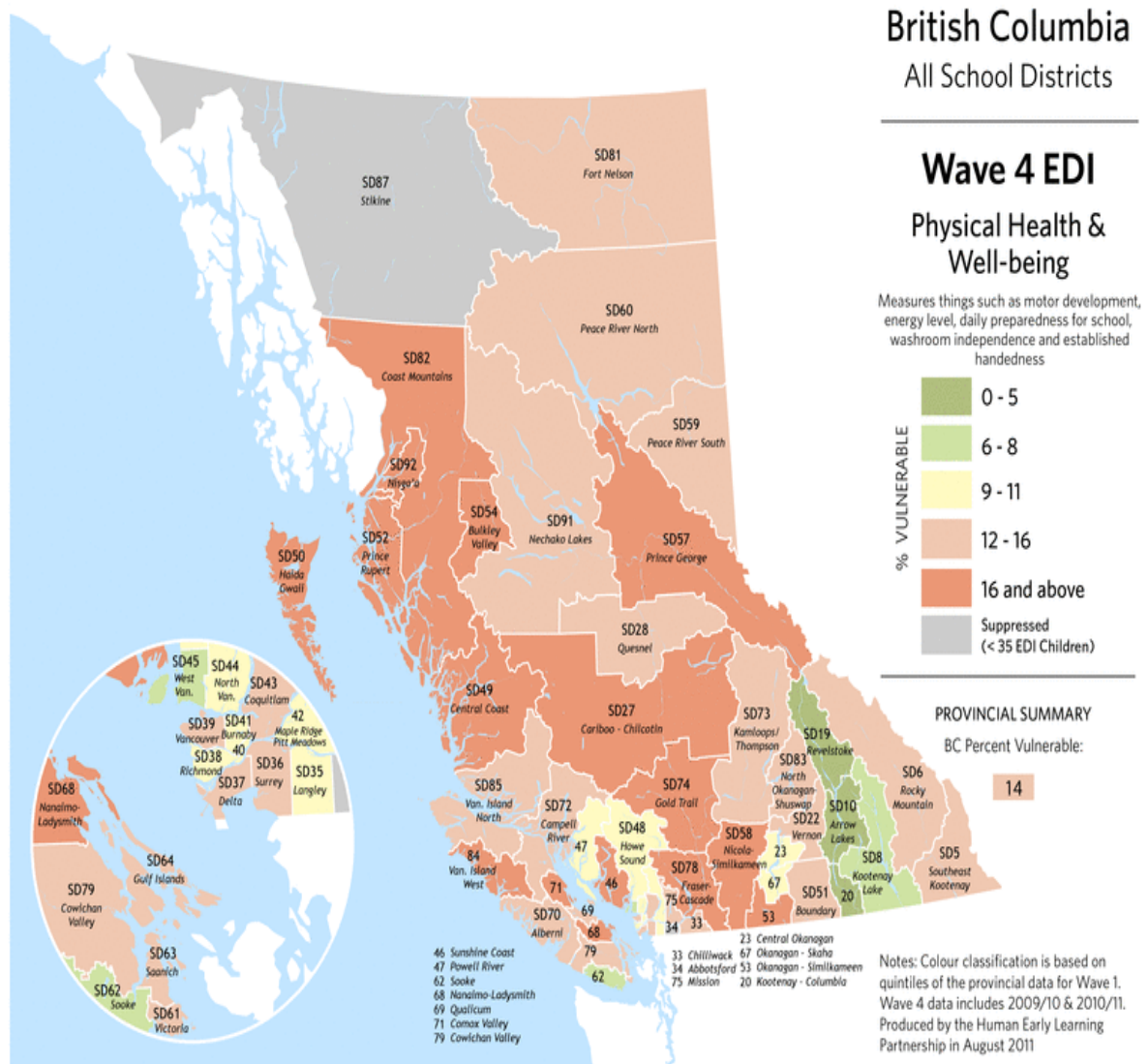


Figure 3.2. From Wave 4 EDI -- Physical health & well-being, British Columbia, All school districts by the Human Early Learning Partnership, 2011, Vancouver, BC: University of British Columbia. Retrieved from <http://earlylearning.ubc.ca/maps/edi/bc/> Copyright 2011 by the Human Early Learning Partnership. Reprinted with permission.

3.6.3 Stage three.

In the third stage of sample selection, a cross-check of each of the schools' website URLs was completed using the search engine Google. This led to the discovery that one

school did not have a website. Consequently, the sample size was reduced to three schools (see Table 3.1.). Section 3.7 explains why the researcher chose to use the three schools that met the criterion, rather than expand the stage two criteria.

To ensure anonymity of the sample, the three schools in the study were referred to by their pseudonyms as School B, School R, & School S.

Table 3.1.

British Columbia Schools Chosen for Sample

School	District #	Location
School B	#08	Kootenay Lake
School R	#45	West Vancouver
School S	#08	Kootenay Lake

In the group of three, two schools were located in School District #08, Kootenay Lake. The Kootenay Lake school district is located in the southern interior of British Columbia. Surrounded by the Selkirk mountain range, Schools B and S are ideal locations for recreation in the outdoors. The two schools are within a 30 minute drive from each other and are both in small communities: populations of just under 10, 000 (School B) and just over 1000 (School S). School R is distinctive from the other three in both location and population size. It is located in West Vancouver School District #45. The population of West Vancouver is just over 42, 000 people. West Vancouver is located just northwest of the city of Vancouver. It is an affluent area with large and expensive properties and homes. Similar to the Kootenay district, it is ideal for recreation - located right on the northern side of English Bay and on the southeast shore of Howe Sound. Figure 3.2. depicts a map of the school district locations in BC.

3.7 Data Source

The research instrument for this study is the Internet, specifically school websites. The primary reason school websites were used for this study was because of the accessibility of information (information on all three schools could be accessed from one location). In addition websites have increasingly become a tool in assisting schools to market their image and to communicate to the school and broader community (Tubin & Klein, 2007, Maio-Taddeo, 2007). Using the Internet to test for the intended outcome of understanding the influence of the Comprehensive School Health approach to a school's culture of health is validated in research studies. These studies demonstrated that findings on the Web are consistent with traditional methods, such as performing a content analysis using the *Journal of Personality and Social Psychology* (Birnbaum, 2004; Gozling, Vazire, Srivastava, & John, 2004). Accordingly, three British Columbia elementary school websites were used as the data source for the research study. After printing a hard copy of all web pages from the three school websites, a content sample of 221 pages was determined. Levering and Cutler (2006) found that the average general web page contains 474 words. Therefore, the number of words the researcher and two coders coded for healthy school content in the study was approximately 104, 754.

Figure 3.3. School Districts of British Columbia

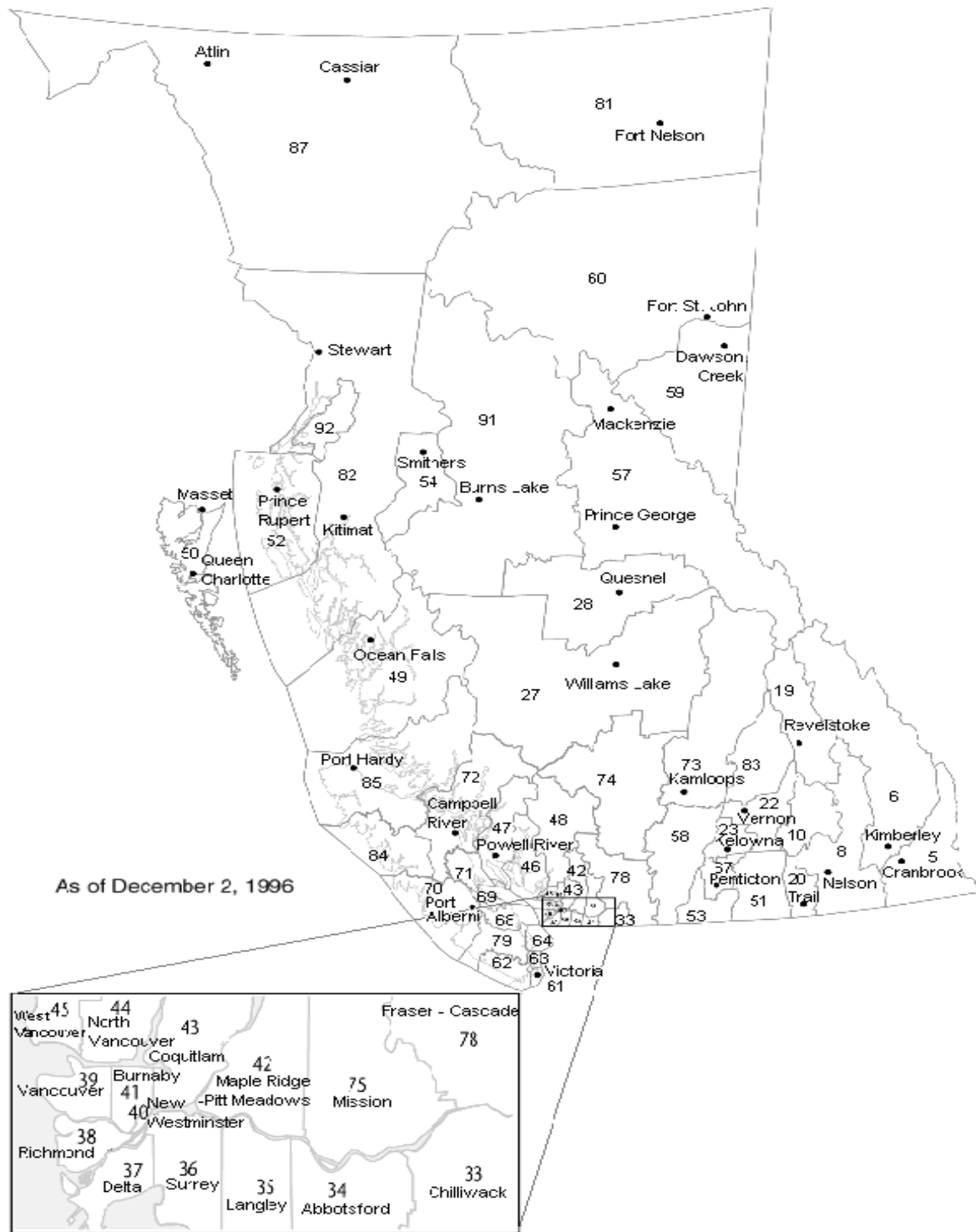


Figure 3.3. From “School-District Contact – Map” by the Government of British Columbia, 2011. Retrieved from <http://www.bced.gov.bc.ca/schools/bcmap.htm>. Copyright 2011 by the Province of British Columbia. Reprinted with permission.

3.8 Data Collection

The data was systematically categorized into the four pillars of the Comprehensive School Health model, which are Social and Physical Environment, Teaching and Learning, Healthy School Policy, and Partnerships and Services (see Appendix A.). This was done as the categories are directly linked to the research question (Braun & Clark, 2006; MacQueen, McLellan, Kay, & Milstein, 1998). This research-based framework was chosen on the premise that “it pays to consider the categories and analytical constructs of previous research before inventing new categories whose validity is uncertain” (Krippendorff, 2009, p. 206). Using the CSH model as the source for classifying data into codes provides for more validity and reliability as previous research has established “valid codes” (Boyatzis, 1998). This framework was chosen by the researcher as it is recognized globally and in the Province of British Columbia as a model of Health Promoting Schools (BC Ministry of Education, 2010). The researcher and coders were instructed to code all healthy schools terms into the four categories for quantitative content analysis (i.e. the number of times a word was used on websites), and qualitative content analysis (words recorded within their context).

Boyatzis (1998) defines these differing data collection methods (quantitative and qualitative) as manifest and latent content analysis. He states,

Manifest-content analysis can be considered the analysis of the visible or apparent content of something. For example, an analysis of the number of times that a person uses the word *excellent* would be an example of manifest-content analysis. We know the degree to which he or she uses the word. We can describe the sentences or phrases in which he or she uses it. We can compare his or her use of the word to that of others in his or her social group, social class, or culture. But to explain or understand the

meaning of the word to the person, or the meaning of the word as it was used in a particular sentence or moment, we must turn to latent-content analysis. (p. 16)

The combination of both quantitative and qualitative content analysis helped overcome the limitation of only completing a frequency count of words. Furthermore, rather than relying solely on the inferences from a frequency count of single words, abstracting the qualitative data, or sentences, assisted the researcher with a thorough analysis of the website content during the data analysis stage.

An abstraction form was completed for each school website in an Excel spreadsheet (see Appendices B & C). The coders were required to be moderately computer literate to be able to navigate through the entire website and to copy and paste data to the Excel spreadsheet (practiced during the pilot study). The search tool was employed as a method for accurately recording the word frequency count. Using the categories defined by the CSH model, the qualitative and quantitative analyses were conducted using a three step process. These steps were: 1) searching and gathering all available pages on the three websites and printing a hard copy (researcher's role); 2) reading over the "Pillars of Comprehensive School Health" document to enable consistency of the codes; 3) extracting the relevant healthy schools information from the web pages and placing the content into one of four categories (Erdogan, Marcinkowski, & Ok, 2009).

3.9 Data Management

All collected data was recorded, stored, and organized using Microsoft Office Word & Excel (2007). Data will be stored in a secure location for five years. Once all data was coded and entered into an Excel spreadsheet, the data from all three contributors (researcher,

coder 1, and coder 2) was combined for analysis. The combined data included all three coder's information from all three websites.

3.10 Data Analysis

The first research question, “What health promoting school attributes do three elementary schools in British Columbia place on their websites for members of the school community to find?,” was analyzed in the second and third stages of the study.

In the second stage, the quantitative results were compiled statistically using an Excel spreadsheet. The researcher looked at frequencies of word usage on the schools' websites, by using the list of 125 words generated in the pilot study for common health promoting school attributes (see Appendix C.). The words with the highest frequency percentages were reviewed for trends and patterns and used to support the results of the thematic analysis. All word frequency counts within each category were totalled to determine the common themes being distributed to the public via school websites (see Figure 4.8.). Data tables and figures were constructed based upon the results.

In the third stage, a thematic analysis was performed to determine emerging themes stemming from the qualitative data within the framework of the four pillars. The method chosen to analyze the qualitative data was thematic analysis because it is a “flexible and useful research tool, which can potentially provide a rich and detailed, yet complex, account of the data” (Braun & Clark, 2006, p. 78). According to Boyatzis (1998), there are three different ways to develop a thematic code: 1) theory driven, 2) prior data or prior research driven, and 3) inductive or data driven. The development of the original categories for the content analysis was prior research driven. With this approach, the study was based on valid categories (Boyatzis, 1998) as it stemmed from earlier extensive research on Health

Promoting Schools (the CSH framework). Thus, using the definition of each category, outlined in Appendix A, the data was filtered during the data collection stage into the four research driven categories.

The qualitative results were analyzed utilizing the NVivo 9 research software and the researcher's knowledge of health promotion and health promoting schools to determine themes. The researcher used four different coloured highlighters to formulate codes and proceed in the development of themes. Once all of the data was coded, each category was analyzed in isolation from the data set to determine three to four themes within each category. After the ongoing process of filtering the data into areas, each theme was defined and named (Braun & Clark, 2006). Themes were determined based on prevalence in the data set, and if the theme appeared in many different areas of the data set or in a variety of pages on the three websites (Braun and Clark, 2006). A new conceptual framework for the CSH framework was created with the themes. Refer to Appendix 1.

Phase four of the study analysis consisted of reviewing the locations of the Health Promoting School content on the school websites. This is consistent with the second research question, "How are these attributes presented (i.e. links to websites, newsletters) to members of the school community?" During the content analysis process, the coders and researcher recorded where on the site the healthy school terms were located. The researcher created a table and graph to display a visual image of the communication trends (see Table 4.6. and Figure 4.5.). The results and discussion of the data analysis for phases two to four are reported in the next chapter.

4.0 Results

4.1 Chapter Overview

This chapter presents the results of the qualitative and quantitative data analysis and is organized into five sections. Section one includes an overview of the analysis and the second section presents the overall results. Section three describes the data analysis divided into the four pillars of the Comprehensive School Health framework (See Appendix 1). The data analysis combines both the quantitative frequency count (see Appendix 2) and the qualitative data. Section four describes the findings of a data analysis of locations of terms on the websites. Section five gives an overall summary of the data analysis. All three schools' data is included and the results are revealed with anonymity.

4.2 Content and Thematic Analysis Overview

For the purposes of this study, the four main categories, Social and Physical Environment, Teaching and Learning, Healthy School Policy, and Partnerships and Services, were determined prior to beginning the research. These categories are internationally supported and are research based. The four categories are the pillars of the Comprehensive School Health framework supported by the British Columbia Ministry of Education in conjunction with the Joint Consortium for School Health (JCSH). “When actions in all four pillars are harmonized, students are supported to realize their full potential as learners – and as healthy, productive members of society” (JCSH). For the content analysis, the quantitative and qualitative data was automatically placed into four categories on an excel spreadsheet.

As with the pilot (see Chapter 3), the data that remained for final analysis resulted in a coefficient of 75% to 100% among all three coders. After the quantitative content analysis was complete, the data was formulated into a graph representing the four categories

frequency numbers (see Figure 4.1.), with a fifth category added to represent data that had a strong relationship with more than one category. The content analyses were completed by the researcher and both coders. The thematic analysis was performed by the researcher without assistance from the coders. The researcher used the prior research-driven approach to choose the original four categories (the CSH pillars) for the content analyses, while the fifteen themes generated during the thematic analysis were formulated using the data driven approach (Boyatzis, 1998). A full list of themes resulting from the thematic analysis is provided in figure 5.1. This list is consistent with the first research goal, “What health promoting school attributes do three elementary schools in British Columbia place on their websites for members of the school community to find?”

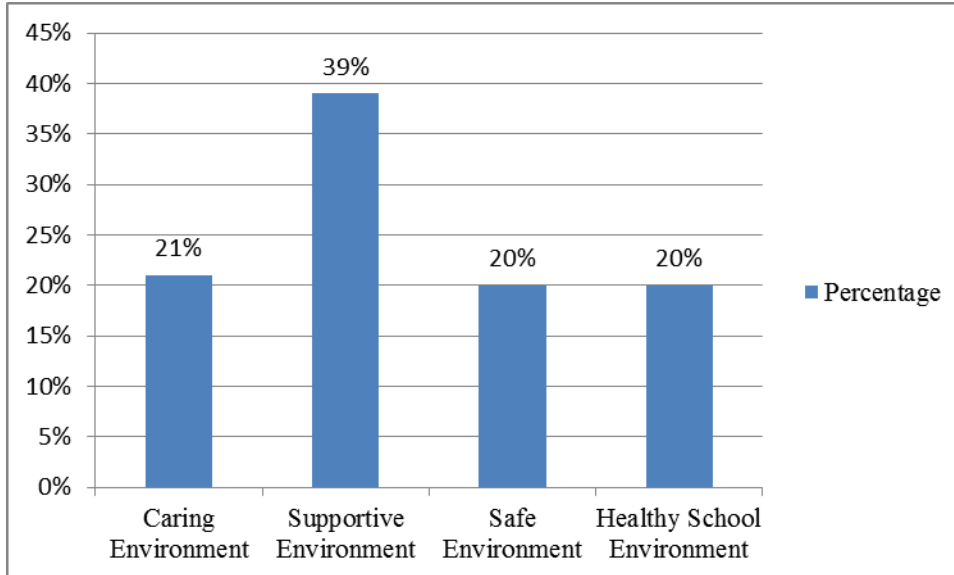
4.3 Results

4.3.1 Category one: Social and physical environment.

The category of Social and Physical Environment was divided into four themes (see Figure 4.1.) with words that fall under this category appealing to the public’s desire for a “socially good” school. The four themes created from the combined data were:

1. Caring Environment
2. Supportive Environment
3. Safe Environment
4. Healthy School Environment (which includes, spiritual, mental & emotional, physical, & environmental health)

Figure 4.1. Social & Physical Environment Themes



All of the above mentioned themes were highlighted in school mottos or mission statements. The significance of school mottos/mission statements is that the health terms were posted at a higher frequency for the school population to see. For example, the school motto and mission statement will occur on homepages and at the top of school newsletters or other school documentation. Schools put considerable thought into how their school environment is depicted based on their motto. School B mentioned safe, caring, and health in their school motto, “At B Elementary School we aim to provide a safe, caring environment that promotes physical fitness, health, and academic excellence.” School R included the safety and supportive themes in their mission statement, “To inspire and develop independent lifelong learners who have a respect, acceptance, and understanding of self, others, and the global society, so that all can reach their full potential by providing a challenging, safe, supportive and happy learning environment.” Lastly, School S listed supportive as a top priority in their school in their motto, “At S Elementary we strive to develop lifelong personal excellence in everyone by empowering and supporting each other within a nurturing

community.” This mission statement reflects a philosophy depicting a school that encourages students to reach their own potential while reaching out to others. The next section examines the four themes of the Social and Physical Environment category.

4.3.1.1 Caring environment.

The theme of caring was encountered most often in the form of fundraising efforts in school newsletters and PAC documents and newsletters. Communities shared their success in helping others which displayed the caring nature of the school’s environments. Students helped with donations to the food bank, collecting clothes and items for their sister school, and raising money for the Terry Fox Foundation. School R promoted the idea of fundraising as a self-fulfilling act of kindness in saying, “your generosity will bring a smile and a full belly to people less fortunate.” School B shared that they support the development of “caring and sensitive individuals who appreciate and respect themselves and others.” School S established the need for practicing positive expressions. *Positive* came up 15 times (3.6% of the data in this theme), the term *caring/care* was mentioned 11 times (2.7% of the data) while *fundraising/fundraiser* appeared on the websites 39 times (containing 9.4% of the data).

4.3.1.2 Supportive environment.

Schools promoted themselves as having “warmth and welcoming attitudes” and being a “family atmosphere.” They encouraged students to empower and support each other within a “nurturing community.” Respect was a common topic in this theme. Students were expected by all three schools to show respect for others and for public and private property. Students are to respect others’ privacy, others’ creations, and others’ space. Respecting others yields a supportive environment in schools. One school stated that respecting others

occurs when someone is “polite, cooperative, and [uses] kind words.” The term *respect* appeared 37 times (8.9% of the Social and Physical Environment data).

4.3.1.3 Safe environment.

An environment of safety is of utmost importance in an elementary school. It begins with the school motto, extends to the actions of policy makers and decision makers, and is revealed in safe procedures by teachers, administrators, and staff. In terms of environment, schools mentioned safety in the following ways: with safe and secure Internet access; safety procedures on the playground and in parking lots; safe decisions regarding allergies; and safety among students with policies and regulations. Safety in terms of the physical environment (work place safety, including electrical safety, ergonomic hazards, chemical agents, etc.) were not a topic on school websites, although they are a component of a healthy school environment. See the Safe School section of Healthy School Policy for more on safety.

4.3.1.4 Healthy school environment.

A healthy school environment includes a concern for the environment and sustainability. School S encouraged sustainability by suggesting at Christmas families should:

- Buy a real tree and plant it in the spring,
- Bake or make your gifts, and
- Avoid commercial wrapping paper, ribbons, bows and tape, which are not recyclable, and opt for gift bags, tea towels or nice boxes, which are ecofriendly.

Another indicator that schools were environmentally concerned was that they used terms *carbon footprint*, *ecofriendly*, *recycling*, *garden*, and *agriculture* on their sites. One school also included “show deep respect for the Earth” in their student Code of Conduct. Another school promoted an environment of commitment to the Earth with their Green Stars club, dedicated to taking care of our precious planet.

Building a healthy school environment which promotes mental and emotional health was described on one website as a school that has a “culture of love and joy and laughter.” Fostering a culture of happiness and the spirit of fun was consistent with all three schools. The term *happy* occurred 12 times (2.9 % of the data) and the terms *play/played* and *participate/participating/participation* appeared 40 times when combined (9.6 % of the data), indicating schools devoting a percentage of their time toward encouraging a joyful and fun environment.

On a global scale, one school aimed to inspire children all over the world to become active with an initiative titled “Global Children’s” challenge. Coordinated events promote increased activity levels in children (Wickel & Eisenmann, 2007) and encourage team spirit and fun. Refer to the Physical Health theme of the Teaching and Learning Category (section 4.3.2.2) for additional information on how schools support a socially positive and spirited environment through group activities and sports.

In summary, the school websites offered a glimpse into school social environments. They promoted relationships as being supportive and caring. Schools were endorsed as safe places for students to learn and to become “Healthy Citizens.” Looking closely at the themes and the quantitative data (see Table 4.1.), the term *support/supportive/supports* topped the frequency count at 20.5 %, while *safe/safely* was at 12.0%. *Caring* appeared 11 times (2.7%)

and *healthy/health/healthier* occurred 27 times (6.5%). Although many of these terms were used together, themes emerged from thoughtful consideration of what separates one idea from another. There was very little content on the schools' physical environment. The next section examines the category of Teaching and Learning.

Table 4.1.

Quantitative Frequency Count for Social & Physical Environment

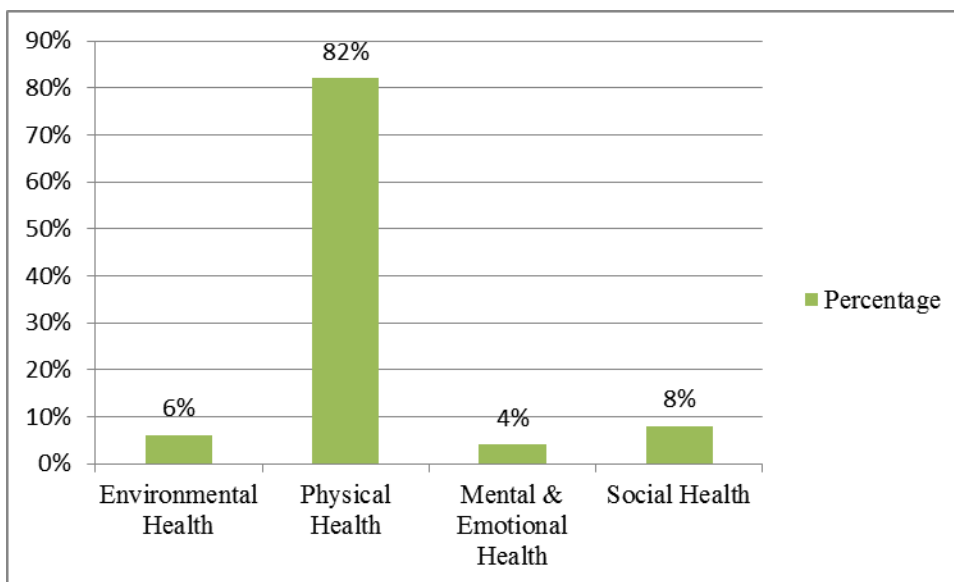
Category	Health Term	Frequency Average	Percentage
Social and Physical Environment	Support/Supportive/Supports	85	20.5%
	Safe/Safely	40	12.0%
	Fundraising/Fundraiser	39	9.4%
	Encouragement/Encourage/Encourages/ Encouraged	37	8.9%
	Respectful/Respect/Respecting/Respectively	37	8.9%
	Participation/Participate/Participating	30	7.2%
	Healthy/Health/Healthier	27	6.5%
	Responsibility/Responsible	25	6.0%
	Positive	15	3.6%
	Restitution/Restitution Model/Restitution- based	13	3.1%
	Happy	12	2.9%
	Care/Caring	11	2.7%
	Play/Played	10	2.4%
	Understanding	10	2.4%
	Leadership	6	1.4%
	Social Responsibility	6	1.4%
	Cultural/Culture	4	1.0%
	Honesty/Honest	2	0.5%
	Illness/Ill/Unwell	2	0.5%
	Healthy School	1	0.2%
	Lifestyle/Lifestyles	1	0.2%
	Violence	1	0.2%
TOTAL		414	37.2%

4.3.2 Category two: Teaching and learning.

The category of Teaching and Learning was broken down into four themes (see Figure 4.2.) that reflect a holistic approach to teaching, encompassing a wide range of curricular areas. The four themes created from the combined data were:

1. Environmental Health
2. Physical Health
3. Mental and Emotional Health
4. Social Health

Figure 4.2. Teaching & Learning Themes



4.3.2.1 Environmental health.

Environmental health was a theme on all three school websites. One school had links to other websites including the Agriculture in the Classroom website. This theme was significant to the growing awareness of schools toward becoming “Green Schools” (British Columbia Ministry of Education, n.d.c). School S had a Learning Gardening project where students garden and then create meals and preserves with the produce, while School R had a

Green Star club. The Green Star club also organized a “Walking Wednesdays” program where the school encouraged all students to walk to school. The club collected base-line data that marked the school at 41% of the students as walking to school on Wednesdays. With incentive prizes from DASH BC along with student presentations and parental involvement, the results demonstrated an increase to 67-77% of students walking to school on Wednesdays. The use of statistics in this newsletter is helpful because the origin of the figures was developed by students and the program outcomes are substantiated by a dramatic increase in children participating in physical activity.

This program provided the students with an opportunity to learn about the environmental benefits of walking, in addition to the physical health benefits. One student described the program:

We are from the GreenStar club and we would like to tell you about walking to school. Walking to school will change the world and make it a better place if we all try. This can make a big difference to our world. Even if you live far – your mom and dad can drop you off a couple of blocks from the school and then walk. This is great exercise for you. (Excerpt from School R newsletter)

The environmental terms were not placed on the original list for the content analysis. This theme surfaced during the data analysis of the qualitative data.

4.3.2.2 Physical health.

Physical health was a common theme consisting of 82 % of the data in the Teaching and Learning category. Via school websites, schools have the opportunity to demonstrate their pride in what their students are accomplishing in the field of athletics. In 2007, the British Columbia Ministry of Education released a daily physical activity requirement of 30

minutes for students up to grade 9; students in grades 10-12 must engage in a minimum of 150 minutes per week. Interestingly, all three schools did not include anything regarding this mandate or provide a link to the Ministry of Education's tracking tool. However, coverage of school sports was extensive in school calendars, newsletters and bulletins. Sports events dates and times were announced using the Web, as were the results of events.

The frequency count revealed a pattern of physical health as the primary discourse for sharing about health with the school population. For example, with the combined data from the three websites, the word *basketball* was cited 39 times (on average) compared to the word *field trip* that was mentioned only 8 times. Other popular words were *run/runners/running* cited 39 times (13.3%), *walking/walk/walks* cited 36 times (12.2 %), and *cross-country running* cited 34 times (11.6%). Top generic terms, such as, *activities/activity*, *sports*, *game(s)*, *team(s)*, and *grow/growth* appeared 33, 21, 16, 12, and nine times respectively. Healthy eating terms appeared far less often than fitness terms. *Fruit* appeared six times (2.0%) and *vegetable(s)/veggies* four times (1.4%). Schools promoted themselves as champions of a "balanced and healthy lifestyle" and denoted that they "embrace a healthy lifestyle and make healthy living choices." One school observed that they have "easy access to nature walks, hikes, beach trails, and snowshoe adventures." Finally, School R made a strong commitment to their student's physical health by having their schools goal include *physical fitness*: "Our school goals are physical fitness, health and academic excellence." Table 4.2. shows a complete list of Teaching and Learning terms.

4.3.2.3 Mental and emotional health.

The theme of mental and emotional health had some degree of representation (4.0%) on school websites. In a school newsletter, School B noted that in team sports: 1) Bullies can

learn positive methods of leadership, while others can receive support, acceptance and be offered an environment in which they can thrive, and 2) There are benefits of increased self esteem. Although infrequently mentioned, improving the overall well-being of students, including mental and emotional health, is of utmost importance to elementary schools.

4.3.2.4 Social health.

The theme of social health, which is the social needs of students, was confirmed on websites in newsletters highlighting team sports and school/class field trips. As noted by School B, team sports provide an “opportunity to participate in physical activity and develop positive social relationships” and opportunities for cooperative play. Social relationships are developed during field trips. Students attended field trips to the ski hill, skating rink, and swimming pool. The term *field trip(s)* appeared on the websites eight times (2.7%). Healthy activities in groups also help create a spirited, enthusiastic environment and provide an opportunity for leaders to flourish:

Under a brilliant sun, over 400 X students, decked out in their red and white clothing, ran to X Senior Secondary, around the track and back again. Scores of enthusiastic supportive parents turned out to help direct traffic and cheer on the runners. The Grade 6 students should all be commended for their leadership in organizing running this event. Without their efforts it would not have been possible. Thank you to all those who donate to the Terry Fox Run. (Excerpt from School R newsletter)

Social events and learning promote cooperation skills and enable students to develop the skill to be caring and respectful towards others.

Table 4.2.

Quantitative Frequency Count for Teaching & Learning

Category	Health Term	Frequency Average	Percentage
Teaching and Learning	Basketball	39	13.3%
	Run/Runners/Running	39	13.3%
	Walking/Walk/Walks	36	12.2%
	Cross-Country Running	34	11.6%
	Activity/Activities	33	11.2%
	Sports	21	7.1%
	Game/Games	16	5.4%
	Team(s)	12	10.2%
	Grow/Growth	9	3.1%
	Field Trips	8	2.7%
	Fruit	6	2.0%
	Physical Education/PE	6	2.0%
	Coach(es)	4	1.4%
	Exercise(s)	4	1.4%
	Vegetable(s)/Veggies	4	1.4%
	Active Lifestyles/Active	3	1.0%
	Athlete(s)	3	1.0%
	Bike	3	1.0%
	Fitness	3	1.0%
	Healthy Choices	2	0.7%
	Physical Activity	2	0.7%
	Sex	2	0.7%
	Alcohol	1	0.3%
	Drugs	1	0.3%
	Healthy Eating/Food Choices	1	0.3%
	Hike	1	0.3%
	Winter Rec. Program/Winter Activity Program	1	0.3%
	TOTAL	294	25.5%

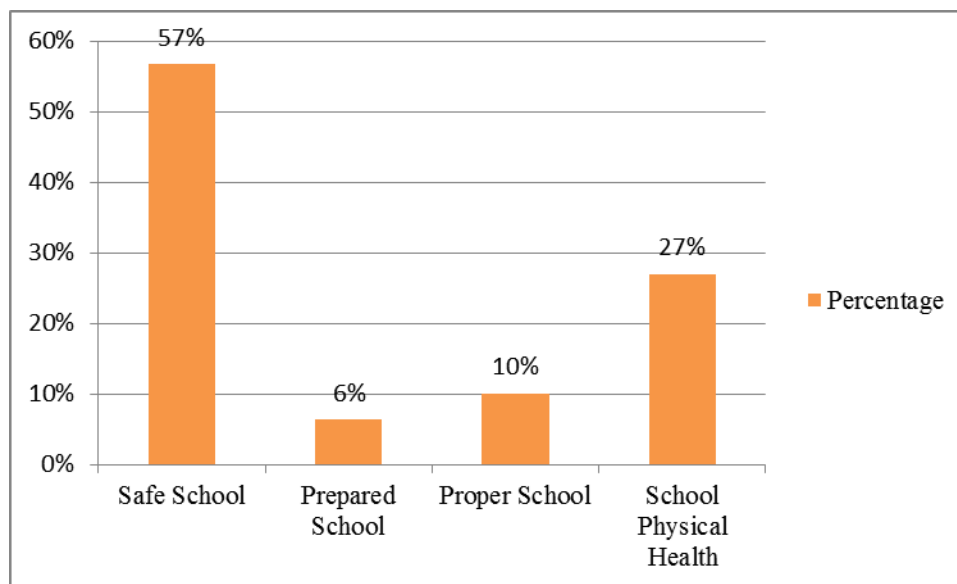
4.3.3 Category three: Healthy school policy.

The category of Healthy School Policy was divided into four themes (see Figure 4.3.).

The four themes created from the combined data were:

1. Safe School
2. Prepared School
3. Proper School
4. School Physical Health

Figure 4.3. Healthy School Policy Themes



4.3.3.1 Safe school.

Schools want to send a message to their communities that they are a safe place for their children. “Rhetoric of ‘safe schools’ is central to the mission statements and operating principles of school boards” (Walton, 2004, p. 24). This became increasingly important to school boards all over North America after the 1999 Columbine massacre and the “copy cat” shooting that occurred in Taber, Alberta (Mahon, 2001). In terms of the research data, many

different safety messages were revealed from safe behaviours, to the safe use of technology, and to safety while participating in games on the playground.

School policies regarding behaviour management were prevalent in all three school websites. Quantitative data results indicate the words *behaviours/behaviour/behave/behavioural* appeared 48 times on the websites. They were the most popular terms in the Healthy School Policy category at 40.7%. School's B and R both had their "Code of Conduct" posted on their sites. School S had a section titled "Behaviour Expectations." Students were encouraged to:

- Engage in safe and responsible behaviour,
- Support each other as bystanders,
- [Have] positive conduct,
- Behave in a way that allows others to participate in all learning activities at schools, and
- Report unsafe conditions.

Students were discouraged from unacceptable behaviour, such as:

- Unsafe play and behaviour,
- Vandalism or theft, and
- Possession of drugs, alcohol, tobacco, matches or lighters, weapons or any other articles with potential to cause harm.

In general messages to all students regarding behaviour, schools also posted messages concerning the topic of bullying. Schools made it clear that they do not tolerate bullying and that it should be reported to the classroom teacher and to school administration. In their Code of Conduct, School B clarifies unacceptable behaviour as:

The school will treat seriously, behaviour or communication that discriminates based on race, colour ancestry, place of origin, religion, marital status, family status, physical or mental abilities, sex or sexual orientation (prohibited grounds set out in the BC Human Rights Code). In addition, the following behaviours will be treated seriously and dealt with accordingly: 1) Habitual interference with teaching or learning, 2) Defiance of authority of school staff and volunteers, and 3) Bullying, harassment or intimidation including: threats, verbal abuse, name calling acts of revenge and physical violence. (School B School Code of Conduct)

On the school grounds, policies for safety involved “walking bikes on school grounds” and following “school traffic guidelines.” Safety and school physical health intercept on the playground. Students in schools were required to “refrain from snowballing;” “refrain from somersaulting on snow banks;” “play safely on playground equipment;” “travel down slide, never up;” and “refrain from playing tag on equipment.” One school listed safety on the school grounds according to specific areas:

- Basketball courts – share hoops fairly, play courteously and fairly
- Gym – no students are allowed in gym without supervision
- Fields – no tackling games or body target games, no bare feet, no climbing on goal posts or fences
- Creek and Forest – students may play there, but stay dry; use stepping stones to cross; stay within fence boundaries; do not lie near pipes or culvert; sticks used for digging and building; never as weapons; treat this area with environmental respect.

School R noted the importance of safety with technology in their code of conduct. Students were to “use technology in a safe and responsible manner.” There were no specific guidelines clarifying whether this statement was referring to Internet use or equipment use or perhaps both. Looking closely at the theme’s frequency count (see Table 4.3.), the term *safety* occurred 22 times on the sites (18.6%). Other popular terms were *bully/bullied/bullies* at 9.3% (appeared 11 times) and, as noted above, 40.7% of the data was represented by the terms *behaviours/behaviour/behave/behavioural* with a count of 48.

4.3.3.2 Prepared school.

The theme of a prepared school shares similarities with safe schools; a school that is prepared for the unknown and unpredictable is a safer school (Paine & Sprague, 2000). School policies regarding preparation included guidelines for school first aid attendants, such as:

- Minor cuts and scrapes are dealt with by the duty teacher or office personnel and
- More serious injuries are reported and checked by the administration.

Parents were given instructions to send only the quantity of medicine a child would need for that day of school. Lastly, schools in this study demonstrated that they were prepared to assist in protecting the environment with policies in favour of environmental preparedness. A few policies of note included using recycling bins and electronic forms in order to reduce paper. The latter of the two stemmed from the school’s enthusiasm with committing to their district focus of sustainability. The most common terms in this sub-theme were *first aid* and *emergency* at 3.4% and 4.2% of the data in the category of Healthy School Policy.

4.3.3.3 Proper school.

Within the context of this study, *proper* refers to the social or moral rules of the school. Most commonly mentioned was a *dress code* for physical activities and outside play (3.4% of the data within the category). When students were physically active, they were required to wear proper shoes that were “non-marking” and appropriate clothes. Students were asked by several schools to dress appropriately for the various seasons when playing outside. In the School S dress code, students and staff were both expected to: remove head gear before entering class, keep shoulders and bellies covered, wear pants that do not show underwear, wear leg wear that covers half the thigh, wear clothing without inappropriate graffiti or slogans, and wear appropriate gym clothing in grades four to seven. Some policies fit into multiple sub-themes. One in particular was that of how to properly travel through the school building, which is to walk not run.

4.3.3.4 School physical health.

The theme of physical health in school policy was prevalent in every school. Students were reminded to “wash [their] hands after washroom use” and to “eat healthy.” School health policy for allergies was commonly cited in the Code of Conduct and in school newsletters. Titles such as “medical alerts” and “being nut aware” were used to draw the public’s attention to the seriousness of allergies. One school stated, “Our mission is to provide a safe environment for all students. Classrooms in which there are students with life threatening allergies will be designated allergy free. In the spirit of the “common good” we request that no peanut products be taken into classrooms.” The term *allergy* was not statistically calculated to determine a frequency count because it was not included in the word usage tool developed during the pilot. In other words, *allergy* was not a term found in

the pilot schools website and thus not reflected in the quantitative data for this section (Table 4.3.).

Another common health topic was head lice. The quantitative data confirmed this, with the term *head lice* resulting in 10.2% of the data covered in the frequency count for the Healthy School Policy content. This topic was found primarily in newsletters directed at parental involvement in reduction and prevention. School B was the only school to mention the Guidelines for Food and Beverage Sales in BC Schools. Following these guidelines enables schools to meet the standards set out by the Province in 2007. Policies for school athletics regarding rules and procedures were missing in the data set. (See the Safe School theme for policy information about safety and sports).

Table 4.3.

Quantitative Frequency Count for Healthy School Policy

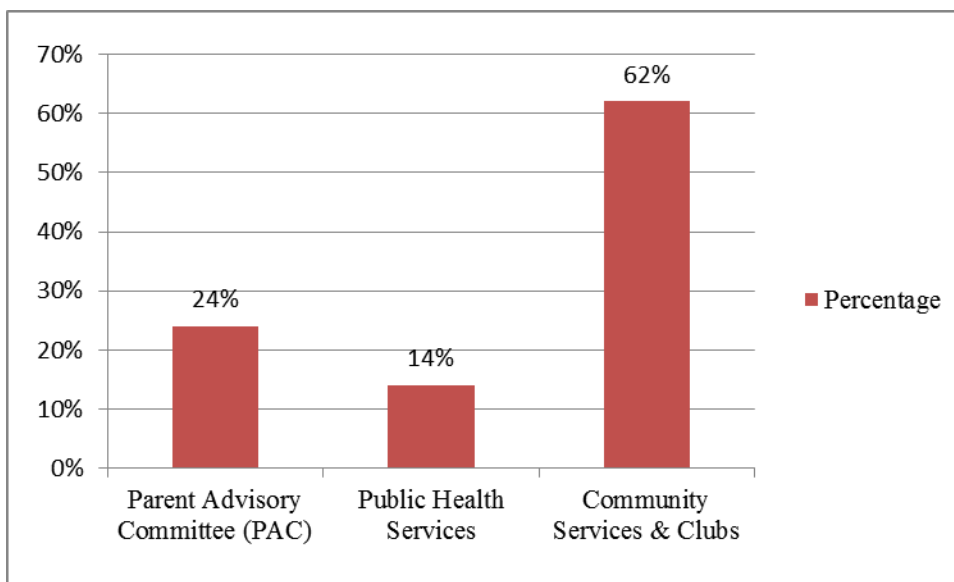
Category	Health Term	Frequency Average	Percentage
Healthy School Policy	Behaviours/Behaviour/Behave/Behavioural	48	40.7%
	Safety	22	18.6%
	Head Lice/Lice	12	10.2%
	Bully/Bullied/Bullies	11	9.3%
	Food(s)	9	7.6%
	Emergency	5	4.2%
	Dress/Dress Code	4	3.4%
	First Aid	4	3.4%
	Helmets	2	1.7%
	Diabetes	1	0.8%
	TOTAL	118	10.6%

4.3.4 Category four: Partnerships and services.

The Partnerships and Services category represented only 13% of the qualitative and quantitative data (See Figure 4.4.). From this result, it is most likely that schools direct their communications to their anticipated audience of parents and students. The three themes created from the combined data were:

1. Parent Advisory Committee
2. Public Health Services
3. Community Services and Clubs

Figure 4.4. Partnerships & Services Themes



4.3.4.1 Parent advisory committee.

The Parent Advisory Committee (PAC) contributed to many health-related school activities, programs and initiatives; for example, serving hot lunches and Booster Juice, family skating nights, and shinny hockey events. Parents spearheaded fundraisers for new school sportswear, P.E. equipment, and new playgrounds. School R had monthly PAC newsletters published on their website with some healthy school content.

4.3.4.2 Public health services.

The theme of Public Health Services had the least amount of cited material on the school websites (see Figure 4.4.). Commonly mentioned items in newsletters were immunizations, vision and hearing screening, and allergies. School S posted links to their local public health authority's monthly newsletters. Additionally, one school posted a thank you to a public health nurse for her visit to the school's classrooms: "Thank you to X for coming in to show the primaries the "proper" way to wash all the germs off their hands. She came equipped with a black light that shows all the little germs and where they seem to hide." Additionally, one school cited a link to DIAL 8-1-1 for HealthLinkBC. Finally, School R dedicated an entire page in their student handbook to School Health Nursing Services (see Appendix E.).

4.3.4.4 Community services and clubs.

Sixty two percent of the data regarding Partnerships and Services was found in the theme of Community Services and Clubs (See Figure 4.4.). Ski hills, curling clubs, karate clubs, the 4-H club, skating rinks, and recreation centres were just a few of the community clubs and programs mentioned on the school websites. Nationally, the Canadian Ski Council was highlighted for its free ski pass to students in grades four and five. The importance of connections to community groups became apparent when the schools mentioned fundraisers. School B listed a business and the local fire department as donors of money for their new playground. The "Community Connections" grant, where schools work with the school district and a community sponsor to fund the efforts of a fundraising goal, was mentioned by one school. The term *community* was cited 50 times, *immunizations/immunology* and *medication* were both cited 3 times, and *health nurse*, *hearing screening*, and *vision*

screening/vision health appeared twice each. Terms indicating partnerships with clubs and community programs were categorized in Multiple Categories (see Table 4.5.).

Table 4.4.

Quantitative Frequency Count for Partnerships & Services

Category	Health Term	Frequency Average	Percentage
Partnerships and Services	Volunteer(s)/Volunteering	55	37.2%
	Community	50	33.8%
	Hot Lunch (Programs)	31	20.9%
	Immunizations/Immunology	3	2.0%
	Medication(s)	3	2.0%
	Health Nurse	2	1.4%
	Hearing Screening	2	1.4%
	Vision Screening/Vision Health	2	1.4%
	TOTAL	148	12.8%

4.3.5 Category five: Multiple categories.

The words found in this category included topics that were strongly related to several of the four main categories. *Environment/environmental* is linked to both Teaching and Learning and Social and Physical Environment. It was cited 32 times (23% of the data for Multiple Categories). *Playground* was tied to Teaching and Learning, Healthy School Policy, and Partnerships and Services (PAC fundraising). It was also cited 32 times. The remainder of the terms in Multiple Categories (See Table 4.5.) are all associated with Partnerships and Services and Teaching and Learning. In total, these community activities were mentioned 75 times on the websites (54% of the data).

Table 4.5.

Quantitative Frequency Count for Multiple Categories

Category	Health Term	Frequency Average	Percentage
Multiple Categories	Curling/Curl/Curling Program	34	24.5%
	Environment/Environmental	32	23.0%
	Playground	32	23.0%
	Ski	19	13.7%
	Club(s)	10	7.2%
	Hockey	4	2.9%
	Kyokuahun Karate/Karate	4	2.9%
	Swimming	3	2.2%
	Yoga	1	0.7%
	TOTAL	139	12.0%

4.4 Content Analysis of Term Locations on Websites

An analysis of the locations of Health Promoting School content is summarized in the next section. This is consistent with the second research goal, “How are these attributes presented (i.e. links to websites, newsletters) to members of the school community?” The location of the HPS’s content plays a role in how information was distributed to everyone involved with the health of students at that school. During the website content analysis process, the coders and researcher recorded where the healthy schools data was located on the site. A further analysis was conducted yielding the results of data location trends (see Table 4.6. and Figure 4.5.). Data was most commonly found in newsletters, the Code of Conduct, the student *Handbook*, *Behaviour Expectations*, and on pages with information about the school, such as *About Our School* and the *Homepage*.

4.4.1 Newsletters.

The manner in which schools care about the health and well-being of their students was reflected in the school newsletters. Combined with the PAC newsletter, 54% of the healthy schools data was from newsletters. All four categories of the Comprehensive School Health framework were represented in newsletters. It was a way to communicate messages to parents and community members in an effort to gain support with health topics, such as allergies and safe school policies. Community partnerships and services were promoted and endorsed using a newsletter. The PAC's role in healthy living was promoted and student leadership in health promotion was endorsed. School sports were celebrated and coaching efforts were recognized.

4.4.2 Code of conduct, behaviour expectations, and handbook.

Policies were also communicated using the school Code of Conduct and links titled *Behaviour Expectations* and *Handbook*, which combined for 25% of the data. Sharing information on how students should conduct themselves on websites enabled the entire school community to become involved in forming one set of standards for expected behaviours at school. School B and School R shared behaviour expectations by posting them in their school Code of Conduct and School S had a link titled *Behaviour Expectations*. School R also had an extra source titled *Handbook* that included etiquette and expectations. Messages on how students should conduct themselves at school were prevalent in these documents, including dress codes, playground expectations, and bullying policies. By putting the Code of Conduct on a school website, these definitive standards were accessible to everyone to read, understand, and practice within common grounds.

4.4.3 About our school and homepage.

Links titled *About Our School* and *Homepage* contained 15% of the healthy schools data. These two links were on the first page or the first link on the school's website. Web designers put a lot of thought into the homepage as it is the first page users see when they enter a site. Content that was available on *About Our School* and *Homepage* gave clear and effective messages that these schools cared about the health and well-being of their students. Words describing the school's culture of health were characteristic of homepages.

4.4.4 Other locations.

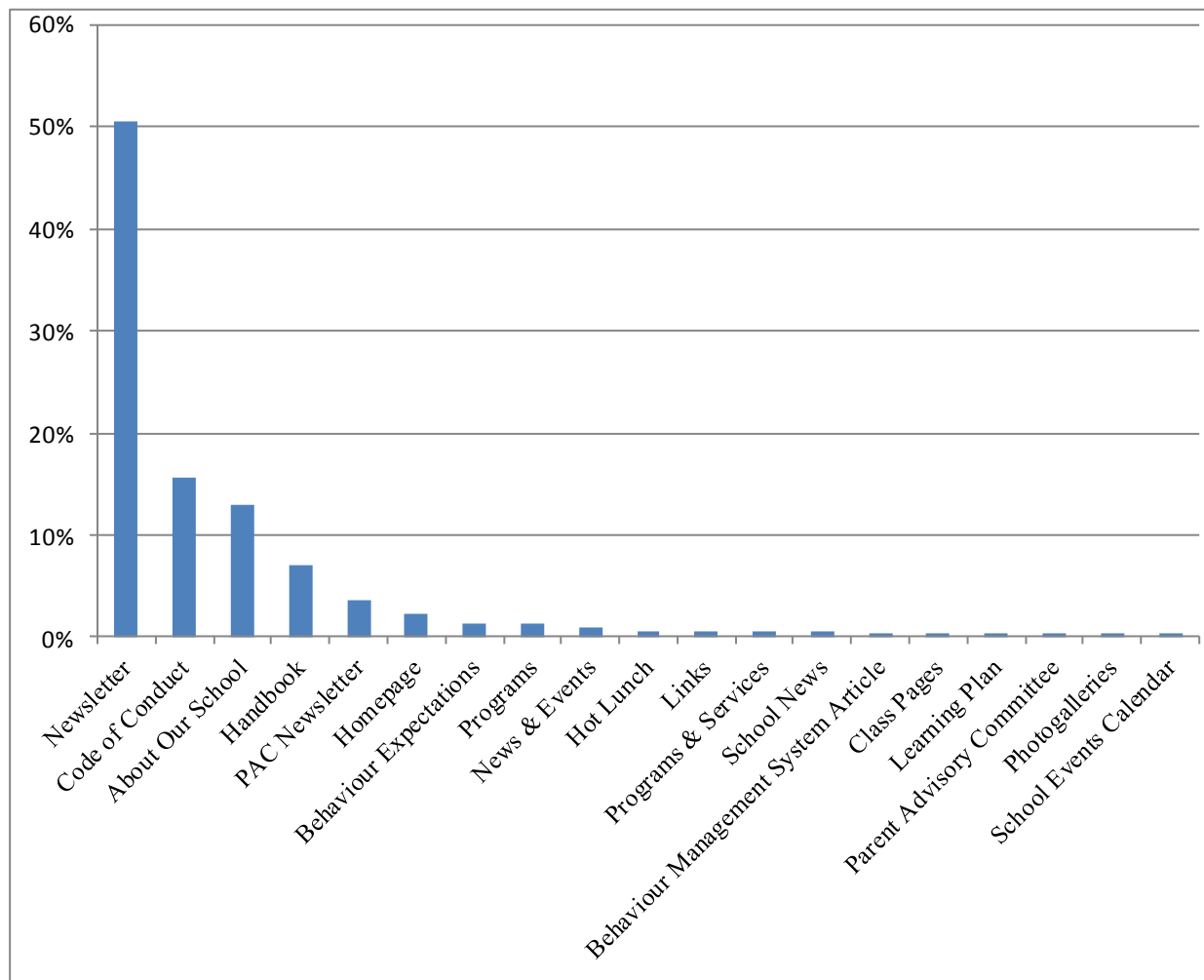
Schools communicated health content in many different locations on websites. School websites had links to hot lunch information and programs initiated by the PAC. Schools posted information about their sports and activities on the *School Events Calendar* and in links titled *School News*, *Programs*, and *Programs and Services*. Class pages were not popular in these three sites, thus the frequency count was minimal for *Class Pages*. However, one classroom teacher utilized the classroom page to advertise the students' trip to the swimming pool. One school provided links to other health-related websites. Another school had a photo gallery that displayed students participating in an environmental health event. Table 4.6 reveals the frequency count results in this category.

Table 4.6.

Healthy Schools Terms Locations for the Qualitative Data

	Healthy Schools Terms Locations for the Qualitative Data		
	Sections of Website	Frequency Count	%
1	Newsletter	156	50%
2	Code of Conduct	48	16%
3	About Our School	40	13%
6	Handbook	22	7%
7	PAC Newsletter	11	4%
10	Homepage	7	2%
11	Behaviour Expectations	4	1%
12	Programs	4	1%
14	News & Events	3	1%
15	Hot Lunch	2	1%
16	Links	2	1%
17	Programs & Services	2	1%
18	School News	2	1%
19	Behaviour Management System Article	1	0%
21	Class Pages	1	0%
23	Learning Plan	1	0%
24	Parent Advisory Committee	1	0%
25	Photo galleries	1	0%
27	School Events Calendar	1	0%
	TOTAL	309	100%

Figure 4.5. Healthy School Terms Locations for the Qualitative Data

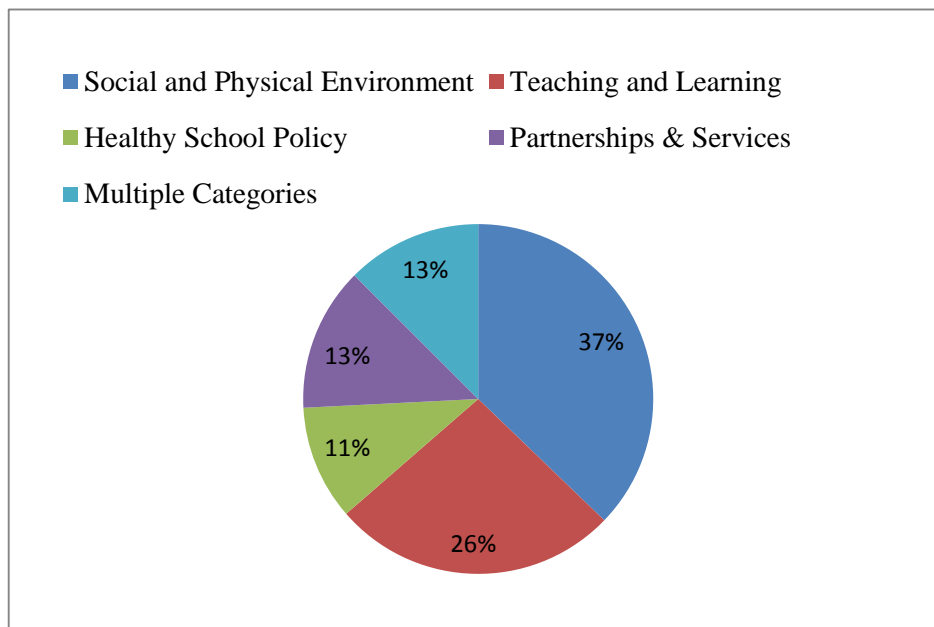


4.5 Summary

The three school websites scattered brief messages articulating their desire to encourage students to become “Healthy Citizens.” The wide variety of healthy school terms and also the environmental content posted on the websites, demonstrated a commitment to the holistic approach to health. Accordingly, all four categories of the Health Promoting Schools framework were represented on the sites, with the category of Social and Physical Environment representing the highest content at 37%. The Teaching and Learning category consisted of 26% of the data. (See Figure 4.6. for a results summary). Schools

communicated messages of safe, caring, supportive, and healthy school environments. School activities and sports were highlighted in school newsletters and on school calendars. Newsletters were also a well-used tool for communicating policies, as were links to the student Code of Conduct. Lastly, schools listed community resources and programs on their sites and used school newsletters as a forum to thank community partners. Results of the study determined the three schools did not utilize their websites to support the BC Ministry of Education's Health and Career Education and Physical Education curriculum, nor did they post Healthy School Policy documents or information regarding teacher wellness on their websites. The next chapter will discuss findings, conclusions, implications and recommendations, as well as suggestions for future research.

Figure 4.6. Quantitative Results from the Frequency Count – Four Pillars of the Comprehensive School Health Framework



5.0 Conclusion

5.1 Chapter Overview

The data reported in chapter four revealed multiple themes, patterns, and attributes of three Health Promoting Schools and how these attributes are publicly presented. Utilizing both qualitative and quantitative content analysis facilitated a thorough examination of the healthy schools content provided on the websites. This study found that the four pillars of the Comprehensive School Health Framework (JCSH) were represented on all three schools' websites and revealed a new conceptual framework with three to four original sub themes within each pillar (see Appendix 1). The following chapter will discuss the insights gained during the process of this study, followed by a discussion of potential limitations of the study, recommendations for future research, and final conclusions.

5.2 Discussion

There has been a shift in the school health paradigm that has altered the way Canadians view schools in terms of health promotion. Given the growing health issues of young people, schools in British Columbia are urged to extend beyond the healthy living curriculum to a holistic, comprehensive, and coordinated approach to health. Developing effective Comprehensive School Health programs requires commitment from all members of the school community. The first step in understanding the capacity of a school to be successful with the CSH approach is knowledge of what the framework entails. Secondly, an understanding of how to best implement the framework within an elementary school setting is required for the success and sustainability of the program. This study was conducted to describe the traits or attributes of Health Promoting Schools with programs implemented in schools who demonstrated leadership in health promotion, as evidenced by their extended

commitment to the BC Healthy Schools Network. Attributes were determined by performing an analysis of data collected from three school websites. It is interesting to note that the four categories as listed by the Joint Consortium for School Health (the CSH framework) were also themes on the three school websites. The following section reviews the four categories of the CSH model by linking the research findings to the literature.

5.2.1 Social and physical environment.

Statistical results revealed broad use of terms throughout the entire website that promoted a “caring,” “positive,” “supportive,” and “safe,” school environment for students. It is evident in the school mottos and mission statements that schools promoted these concepts. However, considering this category, it is not certain if the whole school has embraced these messages or if they are promoted solely with a top-down approach by administrators and web designers. Even so, this is evidence that the school website provides an opportunity for leaders in health promotion to affect the type of power and influence they can have within the school community at large.

As a component of the social and physical environment category, health messages throughout the websites create a culture of health understood by all members of the school community. The four themes that surfaced in this category were Caring Environment, Supportive Environment, Safe Environment, and Healthy School Environment. The first two themes, caring and supportive environment were an important element to the Comprehensive School Health approach as they provide benefits to students in the form of coping skills and social and behavioural choices (Jessor, 1991). Schools that are positive and supportive are also less likely to see incidences of physical aggression (Pickett et al., 2009), crime (Limbos & Casteel, 2008), and bullying (Cheng et al., 2010, Larochette et al., 2010, PHAC, 2008).

The information from the school websites presented in this study indicated a strong emergence of schools exhibiting themselves as safe places to learn and develop. Safety was present in school mottos and mission statements. It was prevalent in the schools' Code of Conduct, other school documents, and in newsletters. This is consistent with the literature that shows how health promoting schools encourage students to be more safety conscious (PHAC, 2008a).

Lastly, healthy lifestyle and environmental health were common themes revealed in this study. A common culture of health for all members of the school community sets these leaders apart from other schools in terms of health promotion. The sample schools were found to be strong proprietors of the Green Schools concept, and all three schools were clear in their communication that they were promoters of a healthy lifestyle.

A missing element in all three school websites was that of teacher wellness. Although not articulated in the BC model, teacher health and wellness might be an important focus of CSH. Healthier teachers are more positive and energetic (Oxreider, 1987; Pine, 1985; Wolford et al., 1988; Maysey et al., 1990) and better models of health (See Chapter 2 for more on teacher wellness).

5.2.2 Teaching and learning.

This study brings to light some gaps in school use of technology to assist with curricular goals. One of the areas that received little attention on the Web pages was the Health and Career Education and the Physical Education curriculum. School sports and activities were highlighted in many areas of school websites (consisting of 82% of the Teaching and Learning data), but the Ministry of Education curriculum was missing from all three sites. What was surprising was not only that the schools did not provide links to the

specific IRP packages, but that there were no links to websites that had connections to the curriculum, especially on class pages. For example, there are many websites that have learning games for students on healthy living topics. Teachers at the three schools did not actively use their class pages; this feature may take some time to be utilized for student learning. Schools have the potential to reach more students with a message to consider all healthy living areas, including environmental, physical, mental and emotional, and social health topics, and to encourage positive behavioural changes (Luepker et al., 1996, Kirby, 1992, Kelder, Perry, & Klepp, 1993). What needs to be evaluated is the direct impact that posting the Health and Career Education and the Physical Education curriculum might have on the school community's health literacy.

5.2.3 Healthy school policy.

Findings regarding the use of school newsletters and web pages for policy distribution were evident in all three schools. Policies relating to safety were consistently presented in school Code of Conduct documents and in school newsletters. Also throughout the websites, schools listed policies that demonstrated the schools were prepared - first aid policies - and proper - dress code. The fact that policies were posted on the websites and thus communicated to the school community is a promising factor in sustaining the policies over time (Barkenow et al., 2006). However, official Healthy School Policy documents, such as the *Guidelines for Food and Beverage Sales in BC Schools* (British Columbia Ministry of Education & Ministry of Health, 2007), were not posted on school websites. The presence of community partner involvement in policy development for schools was evident in policies in the area of student physical health. It was apparent that school health nurses influenced

school policies regarding allergies and hand washing. This supports the WHO's declaration that policy development should be multi-stakeholder (2008).

5.2.4 Partnerships and services.

Developing connections with the local community, an important component of the Comprehensive School Health framework, was apparent in all three schools. One challenge with community partnerships for teachers was ensuring that they enable a meaningful connection and are not a “waste of time” and resources (Boyce, 2004). Schools appeared to have good working relationships with community sports groups and local businesses; for example, ski hills, curling clubs, and the Booster Juice franchise. Establishing strong relationships with community groups is advantageous to students – in developing the necessary environment for them – to reach a higher capacity of learning through the transfer of healthy living knowledge from experts (Veugeliers & Schwartz, 2010). School/community links also provided opportunities for at risk students to receive the type of support that was beyond the capability of the school system, such as school nurse services. Revealed in the thematic analysis were three main groups that partnered with the three school Parent Advisory Committees, public health services, and community services and clubs. This study revealed that full community commitment can assist in successful implementation and lead to the sustainability of the program.

5.2.5 Concluding remarks.

Previous literature suggests that the more comprehensive the school health promotion intervention, the greater the extent of the health outcomes for the school community (Allensworth, 1994). Positive outcomes revealed in this study include a commitment by schools to a wide variety of health outcomes. They demonstrated a willingness to work with

parents, students, and community groups to communicate positive healthy school messages. Healthy school content was found on website pages and represented all four categories of the Comprehensive School Health framework. Missing from all three school websites was content related to teacher wellness. Teacher wellness programs can be beneficial in managing the stress related effects of the teaching profession (Skaalvik, & Skaalvik, S., 2007; Kokkinos, 2007; Betoret, 2006; Borg, 1991; & Zurlo, Pes, & Cooper, 2007). Also missing from all three school websites was evidence of the British Columbia Ministry of Education Physical Education and Healthy Living Curriculum Package. The BC curriculum, considered part of the Teaching and Learning component of the CSH framework, can assist in expanding the learning potential of students. Teachers can use their class pages to link to the prescribed learning outcomes, thus enabling students and parents to have greater access to clear objectives for what is expected of them. Class pages can also be used to link games and learning activities connected to the curriculum for deeper learning opportunities. It remains uncertain if the healthy living content that existed on the three school websites in this study was intentionally placed on the sites for the specific purpose of health promotion. Nonetheless, the data revealed that the commitment to the Comprehensive School Health approach results in a school-wide culture of health that distributes health messages throughout school documents.

5.3 Limitations of the Study

The limitations of the study warrant consideration.

1. Using only schools who are members of the Healthy Schools Network of BC limited the researcher from exploring schools that are non-members who may be Health Promoting Schools.

2. Using the EDI as criteria for the sample limits the generalizability of this study due to the fact that the study did not include schools in the “average,” “high,” or “highest” vulnerable categories of the EDI that exhibit health promotion practices.
3. The data gathered in this study is limited by what leaders in technology and administrators of websites decide is important for public consumption.
4. The validity of the methodological tool used during the quantitative content analysis is limited by the process. Although tested in the pilot, the tool was tested with only one school previous to conducting the main study. This is due to the researcher’s narrow understanding and experience with tool development procedures.

5.4 Future Research

In a follow-up study, it is recommended that research be conducted on a school-based (empirical) study at these three schools with surveys, interviews and/or observations to fully determine attributes of Health Promoting Schools. This could present a more accurate and deeper insight into the attributes of healthy schools. Future research may also include a greater number of schools and school districts; including middle and high schools, plus schools in the independent and private school systems. This might increase the generalizability of the study. Different geographical locations could be studied to see if similar results are found. Future research may also include interviews with web designers to determine if the placement of healthy schools messages on websites is premeditated.

5.5 Conclusions and Implications

It is the responsibility of educators to promote the health and well-being of all children. In order for there to be an improvement in children's overall health and well-being there must be a focus on the culture of health at schools with a mandate to communicate holistic health messages to students in many different ways. The outcome of the content and thematic analyses created a framework to supplement the Comprehensive School Health framework as set out by the Joint Consortium for School Health, utilizing the four categories of the CSH framework with the fifteen themes formulated by the researcher (see Figure 5.1.). This highlights the benefit to qualitative research in building on a previous, research-based model. The new framework, shown in Figure 5.1., can assist schools and school districts who are in the infant stages of implementing the Comprehensive School Health model, to develop programs that are holistic and sustainable. British Columbia schools are currently addressing many aspects of the CSH framework; nonetheless, the study has contributed a guide to all schools, districts, partners, and policy developers to assist with the implementation of a healthy schools program.

The results of this study demonstrate the need for education regarding the potential impact of a school website and how to utilize the power of technology for growth in student health and well-being. The three British Columbia schools in the study demonstrated a commitment to the health of their students, but were missing information regarding teacher wellness, Physical Education and Health and Career Education Integrated Resource Packages, and Healthy School Policy documents. It is recommended that schools and districts consider developing the Internet as a medium for facilitating improvements to the health and wellness of students; this could become a key discussion at staff and school board

meetings across British Columbia. The manner in which utilizing websites utilization also contributes to paperless, or “green,” environment with the attendant economic benefits, should also be considered. It is also recommended that school administrators and website administrators use the framework as a guide to assist with ensuring their school websites include healthy school content in all four areas of the Comprehensive School Health framework.

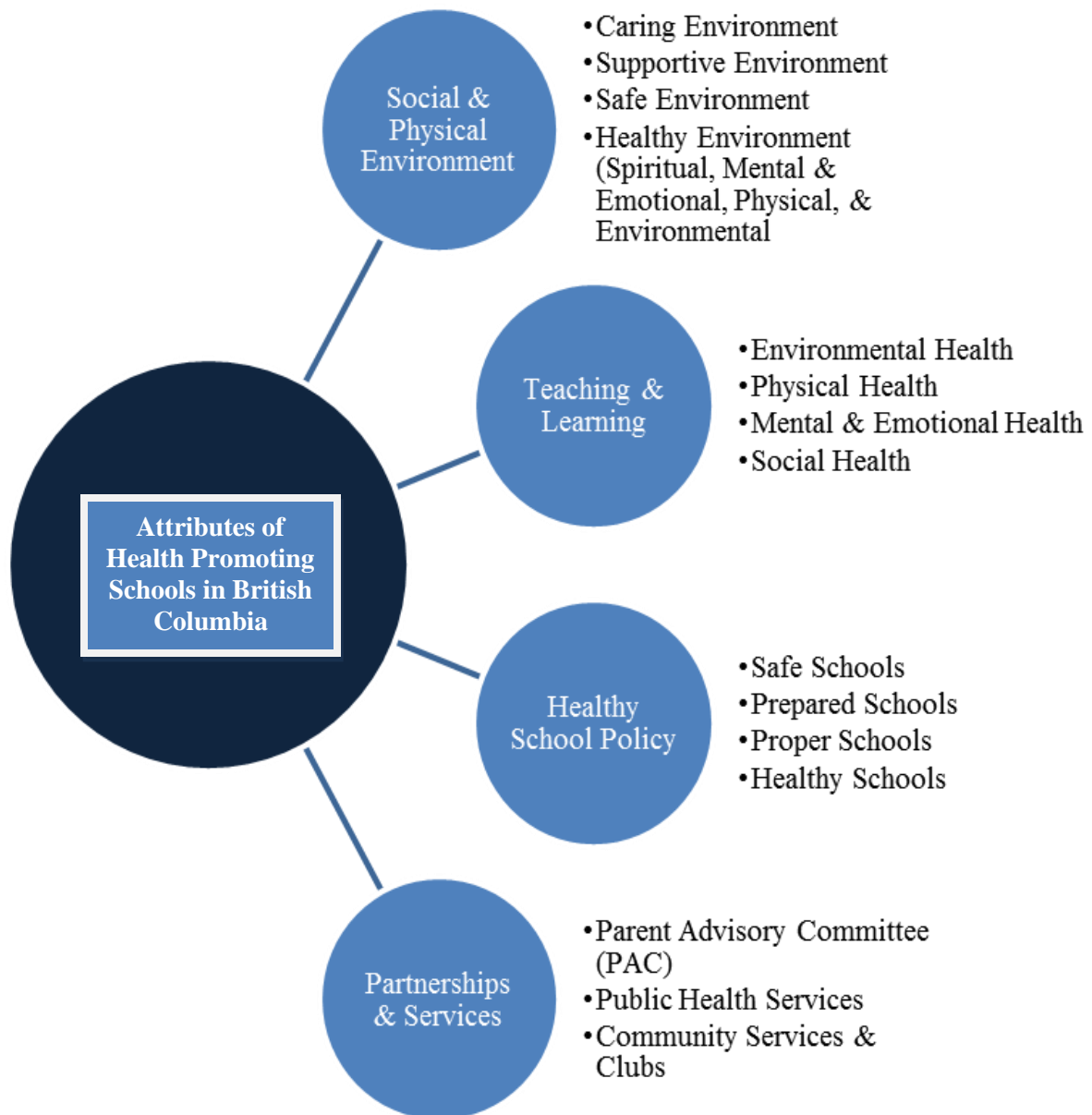
If British Columbia school website administrators could prescribe a curriculum of attributes in health promotion that would be distributed to all members of the school community, it might look like this:

School websites will:

- Describe the school’s social environment in terms of health and wellness for students, teachers, administrators, and staff.
- Describe the school’s physical environment in terms of health and safety.
- Describe the physical fitness, healthy eating, environmental, safety, and social activities in an effort to persuade all children to participate in activities that benefit their health and well-being.
- Post the Health and Career Education and Physical Education Integrated Resource Packages in the effort to educate all members of the school community and to promote a joint effort in learning the prescribed curriculum.
- Post the school Code of Conduct and the Healthy School Policy documents on the website.
- Distribute community program and service information in newsletters and other documents, including links to other websites.

As educators, we have the power to influence a large number of citizens. We can work together to make the changes our schools need to improve the population's health. It can start with something as simple as a website and a Comprehensive School Health framework. Enhancing the health of our students will enable them to live more fulfilled and successful lives.

Figure 5.1. Attributes of Three Health Promoting Schools in British Columbia



Note. The categories of Social & Physical Environment, Teaching & Learning, Healthy School Policy, and Partnerships and Services are adapted from the internationally recognized categories of the Comprehensive School Health framework supported by the British Columbia Ministry of Education in collaboration with the Joint Consortium for School Health and can be retrieved at http://www.jcsh-cces.ca/index.php?option=com_content&view=article&id=40&Itemid=62. Fifteen themes within the framework of the four categories were formulated from content and thematic analyses of three British Columbia school websites conducted by researcher Melissa Jacobs in her Master's thesis, *Health promoting elementary schools in British Columbia: An analysis of school websites* in November 2011.

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Appendices

Appendix A. Four Pillars

Table A.1.

Pillars of Comprehensive School Health

CSH Pillar	Description
Social and Physical Environment	<p>The social environment is:</p> <ul style="list-style-type: none"> • The quality of the relationships among and between staff and students in the school. • The emotional well-being of students. • Influenced by relationships with families and the wider community. <p>The physical environment includes:</p> <ul style="list-style-type: none"> • The buildings, grounds, play space, and equipment in and surrounding the school. • Basic amenities such as sanitation and air cleanliness.
Teaching and Learning	<ul style="list-style-type: none"> • Resources, activities and provincial/territorial curriculum where students gain age-appropriate knowledge and experiences, helping to build the skills to improve their health and well-being.
Healthy School Policy	<ul style="list-style-type: none"> • Management practices, decision-making processes, rules, procedures and policies at all levels that promote health and well-being, and shape a respectful, welcoming and caring school environment.
Partnerships and Services	<p>Partnerships are:</p> <ul style="list-style-type: none"> • The connections between the school and students' families. • Supportive working relationships within schools (staff and students), between schools, and between schools and other community organizations and representative groups. • Health, education and other sectors working together to advance school health. <p>Services are:</p> <ul style="list-style-type: none"> • Community and school based services that support and promote student and staff health and well-being.

Note. The four pillars of the comprehensive school health model is widely used in Canada and supported by the British Columbia Ministry of Education. Adapted from “Pillars of comprehensive school health,” by the Joint Consortium for School Health, 2010, retrieved from http://jcsh-cces.ca/index.php?option=com_content&view=article&id=40&Itemid=62.

Appendix B. Qualitative Content Analysis Data Collection Tool

Qualitative Content Analysis				
Analysis of patterns, themes, and trends related to health promotion in schools				
Comprehensive School Health (CSH) Model Category	Website	Date & Time	Sentence on website	Location on website (i.e. home page, newsletter)
Social & Physical Environment				
Teaching & Learning				
Comprehensive School Health (CSH) Model Category	Website	Date	Sentence on website	Location on website (i.e. home page, newsletter)
Healthy Schools Policy				
Partnerships & Services				

Appendix C. Quantitative Content Analysis Data Collection Tool

Quantitative Content Analysis				
Measuring frequency or the number of times a word is on the website				
Word	Website	Date & Time	Frequency Count	Total Frequency Count for Word
Active Lifestyles/Active Activity/Activities				
Alcohol				
Announcements				
Assembly/Assemblies				
Athlete(s)				
Basketball				
Behaviours/Behaviour/ Behave/ Behavioural				
Bike				
Bully/Bullied/Bullies				
Care/Caring				
Club(s)				
Coach(es)				
Community				
Cross-Country Running				
Cultural/Culture				
Curling/Curl/Curling Program				
Diabetes				
Dress/Dress Code				
Drugs				
Emergency				
Encouragement/ Encourage/ Encourages/ Encouraged				

Word	Website	Date & Time	Frequency Count	Total Frequency Count for Word
Environment/ Environmental				
Exercise(s)				
Field Trips				
First Aid				
Fitness				
Food (s)				
Fruit				
Fundraising/Fundraiser				
Game/Games				
Grow/Growth				
Happy				
Head Lice/Lice				
Health Nurse				
Healthy Choices				
Healthy Eating/Food Choices				
Healthy School				
Healthy/Health/Healthier				
Hearing Screening				
Helmets				
Hike				
Hockey				
Honesty/Honest				
Hot Lunch (Program)				
Illness/Ill/Unwell				
Immunizations/ Immunology				
Kyokuahun Karate/Karate				
Leadership				
Lifestyle/Lifestyles				
Medication (s)				
Participation/ Participate/ Participating				
Physical				
Physical Activity				

Word	Website	Date & Time	Frequency Count	Total Frequency Count for Word
Physical Education/PE				
Play/Played				
Playground				
Positive				
Respectful/Respect/ Respecting/Respectively				
Responsibility/Responsible				
Restitution/Restitution Model /Restitution-based				
Run/Runners/Running				
Safe/Safely				
Safety				
Sensitive				
Sex				
Ski				
Social				
Social Responsibility				
Sports				
Support/ Supportive/Supports				
Swimming				
Team(s)				
Understanding				
Vegetable(s)/Veggies				
Violence				
Vision Screening/Vision Health				
Volleyball				
Volunteer(s)/Volunteering				
Walking/Walk/Walks				
Winter Rec. Program/ Winter Activity Program				
Yoga				

Appendix D. Quantitative Content Analysis Results

Health Terms (Divided Individually within Categories)			
Category	Health Term	Frequency Average	Percentage
Social and Physical Environment	Support/Supportive/Supports	85	20.5%
	Safe/Safely	40	12.0%
	Fundraising/Fundraiser	39	9.4%
	Encouragement/Encourage/Encourages/ Encouraged	37	8.9%
	Respectful/Respect/Respecting/Respectivel y	37	8.9%
	Participation/Participate/Participating	30	7.2%
	Healthy/Health/Healthier	27	6.5%
	Responsibility/Responsible	25	6.0%
	Positive	15	3.6%
	Restitution/Restitution Model/Restitution- based	13	3.1%
	Happy	12	2.9%
	Care/Caring	11	2.7%
	Play/Played	10	2.4%
	Understanding	10	2.4%
	Leadership	6	1.4%
	Social Responsibility	6	1.4%
	Cultural/Culture	4	1.0%
	Honesty/Honest	2	0.5%
	Illness/Ill/Unwell	2	0.5%
	Healthy School	1	0.2%
	Lifestyle/Lifestyles	1	0.2%
	Violence	1	0.2%
TOTAL		414	37.2%
Category	Health Term	Frequency Average	Percentage
Teaching and Learning	Basketball	39	13.3%
	Run/Runners/Running	39	13.3%
	Walking/Walk/Walks	36	12.2%

Category	Health Term	Frequency Average	Percentage
Teaching and Learning	Cross-Country Running	34	11.6%
	Activity/Activities	33	11.2%
	Sports	21	7.1%
	Game/Games	16	5.4%
	Team(s)	12	10.2%
	Grow/Growth	9	3.1%
	Field Trips	8	2.7%
	Fruit	6	2.0%
	Physical Education/PE	6	2.0%
	Coach(es)	4	1.4%
	Exercise(s)	4	1.4%
	Vegetable(s)/Veggies	4	1.4%
	Active Lifestyles/Active	3	1.0%
	Athlete(s)	3	1.0%
	Bike	3	1.0%
	Fitness	3	1.0%
	Healthy Choices	2	0.7%
	Physical Activity	2	0.7%
	Sex	2	0.7%
	Alcohol	1	0.3%
	Drugs	1	0.3%
	Healthy Eating/Food Choices	1	0.3%
	Hike	1	0.3%
	Winter Rec. Program/Winter Activity Program	1	0.3%
	TOTAL	294	26.4%
Category	Health Term	Frequency Average	Percentage
Healthy School Policy	Behaviours/Behaviour/Behave/Behavioural	48	40.7%
	Safety	22	18.6%
	Head Lice/Lice	12	10.2%
	Bully/Bullied/Bullies	11	9.3%
	Food(s)	9	7.6%
	Emergency	5	4.2%
	Dress/Dress Code	4	3.4%
	First Aid	4	3.4%

Category	Health Term	Frequency Average	Percentage
Healthy School Policy	Helmets	2	1.7%
	Diabetes	1	0.8%
TOTAL		118	10.6%
Category	Health Term	Frequency Average	Percentage
Partnerships and Services	Volunteer(s)/Volunteering	55	37.2%
	Community	50	33.8%
	Hot Lunch (Programs)	31	20.9%
	Immunizations/Immunology	3	2.0%
	Medication(s)	3	2.0%
	Health Nurse	2	1.4%
	Hearing Screening	2	1.4%
	Vision Screening/Vision Health	2	1.4%
TOTAL		148	13.3%
Category	Health Term	Frequency Average	Percentage
Multiple Categories	Curling/Curl/Curling Program	34	24.5%
	Environment/Environmental	32	23.0%
	Playground	32	23.0%
	Ski	19	13.7%
	Club(s)	10	7.2%
	Hockey	4	2.9%
	Kyokuahun Karate/Karate	4	2.9%
	Swimming	3	2.2%
	Yoga	1	0.7%
TOTAL		139	12.5%
GRAND TOTAL		1113	100%

Appendix E. School Health Nursing Services Located in Student Handbook

SCHOOL HEALTH NURSING SERVICES

The Community Health Nurse provides the following services to School R.

Immunization of DPT, + Sabin, oral polio and MMR will be recommended at the kindergarten and Grade 1 level if your child's health record indicates a need, and Grade 6 - Hepatitis B.

Vision and hearing screening is carried out in kindergarten, or on a referral basis in any other grade.

Mrs. X, the community nurse at School R, will be available Tuesday, Wednesday and Thursday at 555-555-5555. Mrs. X will be involved in control and follow-up of communicable disease during the school year. If you have questions about this, or your child contracts an infectious disease, please contact Mrs. X either through the school or at 555-555-555.

SCHOOL DISTRICT #45

1075 - 21st Street, West Vancouver, B.C., V7V 4A9
604-981-1000

PERSONNEL AND SERVICES

Superintendent of Schools Mr. J.

Assistant Superintendents Mr. H.

Ms. C. Mr. K.

School Trustee Liaison Mr. S.

STUDENT SUPPORT SERVICES

At the District level more extensive diagnostic services and special programs are directed by Ms. L., Principal of Learning Resources and Special Education. Included in his department are the following services:

Challenge and Gifted Program

Speech Pathology and Language Development

English as a Second Language

Home and Hospital Instruction

District Education Consultants

Severe Learning Disabled Instruction

Special Services Assistants

Note. This document was altered to ensure the anonymity of the school.