

EXPLORING FOOD LITERACY IN NOVA SCOTIA PUBLIC SCHOOLS:  
A CRITICAL ANALYSIS

by

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## DEDICATION

*“Life is a journey, not a destination” ~ Ralph Waldo Emerson*

This thesis is dedicated to my wonderful family:

***To my late father (David); my mother (Jean) and my brother (Nick):*** Thank you for taking a genuine interest in my work when it intrigued you and for pretending when it didn't. Thank you for your unwavering encouragement; your brilliant sense of humor; and instilling a strong conviction in me. Thank you for your endless love and support through each road traveled and detoured. My only regret is that that my Dad died before I finished writing my thesis. When I grappled for motivation, I thought about finishing this for him!

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## ABSTRACT

Our contemporary way of life has created a challenge for society with regards to food and well-being. The environment in which we live has changed dramatically over the past half century and has had a profound effect on our health and food related choices and behaviours, accelerating diet-related diseases and hindering environmental sustainability. Thus, becoming literate about how food affects one's health, community and environment is important to combat this challenge. This study sought to explore how food literacy (FL) is conceptualized and communicated to better understand its dimensions, the socio-cultural context, and the interaction with the food environment. This was done through developing and testing a proposed *FL Conceptual Model* using a critical lens through a cultural systems paradigm framework. Semi-structured interviews were conducted with 17 participants, comprising nine teachers and eight parents of students in Nova Scotia public schools. Thematic data analysis was used to define four key themes as predetermined from the interview transcripts: 1) Complexity of Capitalism and Regulation; 2) The Nexus of Social Practices; 3) Intricacies with the Value of Food; and, 4) Dichotomy of Two Cultures. I concluded that understanding the ideologies imposed on society and schools is imperative to empower those within the boundaries of the school system to progressively transform the socio-cultural context related to the school food environment. This can only be achieved through a better understanding of FL as a concept and how it can be applied in order to mobilize change for better health and well-being of self, society and the environment.

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## **CHAPTER 1: INTRODUCTION**

Over the past half century, the environment in which we live has changed significantly and has had a profound effect on our health and food related choices and behaviours given that diet-related diseases are on the rise. The EAT- Lancet Commission recently acknowledged that our ‘faulty food system’ has launched a growing public health concern related to the double burden of under- and over-nutrition (Willet et al., 2019). As a result, there has been a substantial focus on interventions, policies, and programs to improve food and nutrition related knowledge and skills, especially in schools (Micha et al., 2018). However, these interventions, policies, and programs often fail to address the social, economic, ecological, and cultural aspects related to food, creating a disconnect between what school aged children and youth are learning about food and health in schools and what is being modeled in the broader environment. This introductory chapter of this dissertation discusses the context of food; background and motivation of this research, including overarching research question and aims; and, a brief outline of the thesis.

### **1.1 Historical, Political, and Economic Context of Food**

Food has been historically approached and grounded in a global and political economy in order to understand the power and dynamics of food production, distribution, and consumption patterns; an analysis that has been termed ‘food regimes’ (Friedmann, 1993). The food regime concept considers ‘structured moments’ in the history of capitalism and food relations (McMichael, 2009). In order to better understand the contemporary food regime, we must look back at the previous North American food regimes:

The First Food Regime (1817-1914) [was] characterized by family farmers in settler states whose surplus of grain and meat fed the new industrial working-classes in Europe. During the Second Food Regime (1950s-1970s), Europe became a major surplus producer, and joined the US in dumping their surplus to the Global South. The characterization of the Third Food Regime of the last 30 years is contested; however, there is a consensus about the increasing corporate control over food and agriculture (Doerr, 2018).

The current food regime, wherein there is an increasing corporate control of food and agriculture, is a critical juncture to our civilization. Given the increasingly influential and powerful globalization of the corporate food system, which has seen the centralization of food corporations, introduced a surplus of processed foods, and created a plethora of food advertising, food has become a corporate product; and agriculture has become “less and less an anchor of societies, states, and cultures, and more and more a tenuous component of corporate global sourcing strategies” (McMichael, 2000, p. 23).

It is important to note “agricultural production more than tripled between 1960 and 2015” (Food and Agriculture Organization of the United Nations [FAO], 2017, p. 4) and “is crucial to economic growth: in 2014, it accounted for one-third of global gross-domestic product” (The World Bank, 2018, para. 2). However, in the quest for control over the global food system, agricultural corporations have triggered a number of harmful political, social, and economic consequences which are “the largest cause of global environmental change” (Willet et al, 2019, p. 3). In essence, the “adverse impact of modern activity on the environment” (United Nations Department of Economics and Social Affairs [UN DESA], 2019, p. 69) and current ecological conditions being linked to

agri-food systems have started to shift the discourse within the political and economic context of food (McMichael, 2009).

Food in the 21<sup>st</sup> century is the most complex it has ever been (Slater, 2017) and “represents one of the greatest health and environmental challenges of the 21<sup>st</sup> century”(Willet et al, 2019, p. 3). In fact, “global environmental and socio-economic changes are happening simultaneously, and they involve rapid and complex processes with uncertain consequences” (Ericksen, 2008, p. 235). As such, there have been dramatic transitions in what and how we eat over the years (Ericksen, 2008), and increasing evidence of global food production competing with “rising inequalities, conflict and climate change [which] pose additional challenges, [that] contribute to growing numbers of people facing hunger and displacement in several parts of the world” (UN DESA, 2019, p. 69). Given the concerns related to global population growth, loss of biodiversity and ecosystems, deforestation, water pollution, deterioration of air and soil quality, and emissions-driven climate change (UN DESA, 2019, p. 69) resulting in droughts, floods, disease, and war (Lang, 2009), as well as rising food costs (Charlebois et al., 2018), a food crisis has demanded public attention worldwide (McMichael, 2009). An additional concern related to climate change that should be considered is that it may not only affect food security but nutrition composition (Finley et al., 2017), such as “the type, amount, and nutrient quality of food that can be produced” (Macdiarmid & Whybrow, 2019), ultimately affecting human health and well-being. Therefore, “the global food system needs to be transformed to reduce its effect on human health and environmental stability and [for] reversing trends” (Willet et al., 2019, pp.4-5).

### **1.1.1 International Context**

In 2012, the World Health Organization (WHO) acknowledged human activities were affecting global climate and that continuing to live in this manner would have profound and adverse effects on the social and environmental determinants of health, such as food and water. In 2015, the *Sustainable Development Goals* (SDGs) were adopted by world leaders at a historic United Nations (UN) summit, in response to intensifying concern over the sustainability of human societies. In 2016, the UN declared the *Decade of Action on Nutrition* as an extraordinary opportunity for countries to come together to raise awareness around a common vision and achieve nutritional impact for a healthier, more sustainable future. In 2019, the World Health Organization released the *World Health Statistics 2019: Monitoring Health for the SDGs Report* noting “globally, there have been improvements in most of the health related SDG indicators” however “progress has stalled or trends are in the wrong direction” for children living with overweight (WHO, 2019, p. 14) signifying there is more work to do around childhood overweight and obesity.

### **1.1.2 Canadian Context**

In recent years, Canada has followed this trajectory and developed several calls to action to improve food and health. In 2016, the Minister of Health announced a new *Healthy Eating Strategy* which includes four actions; revising *Canada’s Food Guide*, restricting marketing of unhealthy foods and beverages to children, improving nutritional quality of foods, and supporting increased access to and availability of nutritious foods. In 2017, the Government of Canada launched consultations for the first ever federal food policy and four themes were identified: food security, health and safety, environment,

and economic growth. It is important to note that food was recognized as a determinant of health within the food security theme while food literacy (FL) was identified as important within the health and safety theme. In January 2019, the revised *Canada Food Guide* was launched with the statement “healthy eating is more than the foods you eat”, thereby placing an emphasis on eating behaviours, food skills, culture, health and the environment (all components of FL). In April 2019, the *Canada Climate Change Report 2019* was released indicating Canada is trending at double the rate of global temperature increases which has been propelled by human actions. In June 2019, the Government of Canada announced the first ever *National Food Policy* for Canada, with a focus on healthy and sustainable food systems; as well as a commitment to initiating the first steps to create a *National School Food Program* in cooperation with provinces and territories.

### **1.1.3 Nova Scotia Context**

Nova Scotia (NS), a small province in Canada, has been on track to improve food and health outcomes across the province over the past several years. In 2005, a framework for action on healthy eating, entitled *Healthy Eating Nova Scotia*, was released. In 2006, the NS Departments of Education and Health and Wellness introduced a joint school food and nutrition policy (SFNP) to promote healthy foods in schools. In 2012, a provincial wellness strategy, *Thrive! A Plan for A Healthier Nova Scotia*, was announced to support policy and environmental approaches for healthy eating and physical activity. This strategy outlined integrating food knowledge and skills into health, family studies and science curricula (Province of Nova Scotia, 2012). In 2014, the *Nova Scotia Minister’s Panel on Education* advised there were gaps in curriculum, including life skills such as healthy living and nutrition education (Province of Nova Scotia &



Department of Education and Early Childhood Development, 2015). In 2018, the Province of NS doubled its annual funding for breakfast programs (CBC News, 2018).

## **1.2 Background and Motivation**

There is growing recognition that the health of children and youth and their food related behaviours are influenced by a range of factors that extend beyond the notion of individual choice. These factors are present within the physical food environment, social environment, economic environment, and informational environment (Contento, 2008; Glanz, Sallis, Saelens, & Frank, 2005; Story, Kaphingst, Robinson-O'Brien, & Glanz, 2008). Consequently, food related behaviours and choices are in a constant web of chaos and shaped by a complex food system and environment.

Through increasing modernization and urbanization, food systems have dramatically changed over the past century. Due to technological advances related to food production, transportation, marketing and advertising and its reach worldwide (Francis et al., 2003), society is losing its connection to nature, agriculture, and food production (Harmon & Maretzki, 2006; Hess & Trexler, 2011). The complexity of the links between the food system and the physical, social, economic, information and service environment in which we live, learn, work, and play have a significant role in facilitating or hindering health and food related choices and behaviours (Cubbin, Egerter, Braveman, & Pedregon, 2008; Institute of Medicine & National Research Council, 2013; Kirk, Penney, & McHugh, 2010). Furthermore, the complex food system has created an undesirable food environment which influences our eating patterns via prolific marketing and advertising techniques and access to ultra-processed and convenience foods in every possible location individuals' frequent (Slater, 2017). As such, it seems society has

allowed corporate food industry to predominantly shape food and nutrition education (Slater, 2017). The food, food systems, and food environment changes have significantly impacted the relationship between social context and amounts of food consumed as well as influence on food choice (Robinson, Thomas, Aveyard, & Higgs, 2013; Vigden, 2016), ultimately changing our relationship with and the culture of food.

Today's broader societal values locate food and health choices within the individual (Jackson, 2005). However, the political, economic, social, cultural and physical environment we live in has created ideologies, such as work, time and social pressures, that impact our food choices and behaviours. In doing so, our food related actions in which pre-packaged convenience foods often take priority over taking time to prepare and eat whole foods, has accelerated the climate change crisis which has generated an unequal distribution of the world's food and resources, creating food and health inequities, including overweight and obesity (Weiler et al., 2014).

The rise in childhood obesity, primarily due to unhealthy eating patterns, has elicited public health concern since the early 1990s, creating a notable opportunity to link health and education internationally. In Canada, the provincial and territorial governments have the primary responsibility for school health and education under Canada's constitution which is often shared between Departments of Education and Health (Provincial and Territorial Guidance Document, 2013). Yet, the health and education nexus is not being recognized to its full potential (McIsaac, Kirk, & Kuhle, 2015; Rasberry, Slade, Lohrmann, & Valois, 2015) due to a lack of comprehensively aligned health and education mandates (Valois, Slade, & Ashford, 2011). "Education has its own agenda that is quite distinct from that of the health sector" (Worsley, 2015, p.17)

given that public health's attention is directed towards influencing environments and settings, whereas education concentrates on fostering "human agency and action" (p. 15).

Children and youth have increased opportunities to access food and beverages at school (Shroff, Jones, Frongillo, & Howlett, 2012), therefore schools have been "identified as a focal point for intervention" (Ritchie et al., 2015, p. 647) as part of a systems approach to support the health of children and youth (Institute of Medicine [IOM], 2012). In fact, schools have an important role in teaching about food and health as well as providing a supportive environment to reinforce messages, however there is often a disconnect between what school aged children and youth are learning about food and health in schools and what is being modeled in the broader environment. NS has a rich history of innovative public health initiatives in schools, such as school food programs, as early as the 1970s, however, the broader societal influences have created the need for additional supports. The Province of NS recognized this need for supportive environments and introduced a school food and nutrition policy (SFNP) entitled the *Food and Nutrition Policy for Nova Scotia Public Schools* to promote healthy foods in school settings in 2006 (Fung, McIsaac, Kuhle, Kirk, & Veugelers, 2013). The SFNP is a joint provincial policy mandated by the Departments of Education & Early Childhood Development and Health & Wellness that provides the standards for foods and beverages to be served and sold in school settings. The SFNP hosts seventeen requirements for schools: twelve directives, which are required, and five guidelines that are options for consideration (Province of NS, 2012). The purpose of the policy is to make the healthy food choice the easy choice in schools. Alongside supportive environments, 'nutrition education' was named as one of the directives in the policy, highlighting the critical role

that schools have in creating “a positive food culture through experiential learning opportunities” (Nowak, Kolouch, Schneyer, & Roberts, 2012, p.395).

Although many public school systems offer health, family studies, and science curricula, a food and nutrition course is often not mandatory for students to graduate. Therefore, not all students receive comprehensive food and nutrition education in school curriculum. Nevertheless, some schools have partnered with farmers, outside organizations, and after-school programs to increase food and nutrition skills with the intention of increasing the experiential (hands-on) learning opportunities for the students in and outside the classroom.

Due to the challenges associated with changing social norms and interacting with the complex food system and food environment, there is a need to improve society’s engagement with food to encourage a better relationship with it for positive health and well-being outcomes, both individually and ecologically. This confluence has resulted in the emergent and evolving term *food literacy* (FL). Many diverse definitions and frameworks of FL have been advanced and will be discussed in Chapter Three. These definitions all establish a need to increase food knowledge and skills to improve health and non-communicable chronic disease prevention as well as ecological environment well-being.

Recognizing there is a gap in knowledge and skills related to food and health of self, community and environment, both locally and globally, while understanding the importance of health and education policies (i.e., school food policies), practices, processes, and systems, it is important to better understand how FL is conceptualized and communicated. This proposed research is novel and timely given there is inadequate

research into the intersection of the complex food environment, food policy, and the factors that influence FL in the school community. As far as I can discern, this perspective is currently not present in the literature and will provide invaluable information that will reveal FL experiences and perspectives with the intent of (re)framing FL knowledge and understanding as a powerful approach to challenging our relationship with food and the dominant societal food culture. It is this ideal that has been the motivation of the following qualitative research proposal to explore FL in NS public schools.

### **1.3 Research Aims**

Taking into consideration this background and motivation, there seems to be an imminent need and opportunity to understand the relationship between the school context and the broader driving forces related to FL. This dissertation outlines a **qualitative exploration** with the intent to **understand how food literacy is conceptualized and communicated**. Specifically, the study aims to explore the *meaning* of FL, the *components* of FL, existing *knowledge, skills, behaviours, values, attitudes, language and norms* related to FL, FL *events and practices* as well as *barriers and enablers* that affect FL.

The following research objectives support this overall study aim:

- 1) Review and (re)frame FL within the growing interdisciplinary literature,
- 2) Develop and test a comprehensive conceptual model in order to suggest a new and more comprehensive approach to understanding FL,
- 3) Provide an empirical analysis of FL in NS public schools.

Through these objectives, my intention for this research is to understand the factors and forces informing FL, more specifically as it relates to the school community.

Findings from this study will be useful to inform policies, programs and initiatives that impact FL at the individual, school, and societal levels. Given there has been a “shift of research methods from quantitative to qualitative [since the 1960s], and the superiority of quantitative research [is] not as powerful as before” (Rahman, 2016, p. 102) due to the new methodological approaches (such as ethnography, critical research, and other forms) as well as my desire to best understand the multiple perspectives related to socio-cultural factors informing FL in NS school communities, this research applied a qualitative, critical ethnographic case study methodology.

#### **1.4 Situating Myself as Researcher**

My location as a researcher has been influenced from a variety of roles, contexts, and perspectives over the course of my life. I grew up in a small town, in a small province, where agriculture and fisheries surrounded me. I have worked as a Registered Dietitian in diverse contexts and in a variety of locations, including internationally, which afforded me the opportunity to experience various socio-cultural contexts. Each role and perspective have inspired the foundation of my inquiry with the underpinning of social justice and equity, as described below:

- Growing up in a small town in Prince Edward Island, Canada, I was surrounded by farmers and fishers. Although my family were not farmers or fishers, my parents valued fresh and whole foods; we had a garden in our backyard where we grew vegetables and fruit. My parents baked their own bread; I would watch them knead it and let it rise in the window of our living room. My first summer

job was picking strawberries at the age of nine. Naturally, my early years were foundational to my love of whole foods and likely led me to becoming a Registered Dietitian.

- In my first five years in the profession of dietetics, I worked as a Clinical Dietitian. The focus and perspective of this work was to educate individuals who had poor health and poor compliance to diets; each patient who did not adhere to their diet or change their behaviour pushed me closer to leaving the clinical field as I felt I wanted to reach people before they fell ill.
- The next several years I spent in the field of food and nutrition was working in the context of education and academia. As a researcher, I was involved in research projects that assessed food policies in childcare and school settings. As a university professor, I taught food and nutrition courses to university students. In this role as an educator, I employed a learner-centred pedagogy in which I created the structures and conditions for student learning.
- I shifted from clinical dietetics to public health nutrition during my many years in academia, and as such, I apply a food and nutrition lens to the following five generally accepted public health functions: population health assessment, health promotion, disease and injury prevention, health surveillance, and health protection. My overall focus is on the population, the social determinants of health, and the root causes of disease and disability (through health equity). I consider the needs of the whole population and take into consideration how social change can be facilitated via policy, programs and interventions, and in particular,

education, seeing as it aims to build capacity and agency of individuals and populations.

- Fast forward to present day, I am currently a graduate student at Dalhousie University completing my Doctor of Philosophy in Interdisciplinary Studies (Health and Education) and am passionate about food, nutrition, health, and education. Food and nutrition intersect with health, education, agriculture, environment, community engagement, globalization, social justice, and health equity. As part of my studies, I have had the opportunity to learn about power and privilege as it relates to health equity, social justice, and education.
- When I started my doctorate degree, I was working for the Province of NS; my role as Senior Policy Analyst had a strong public health lens with a specific focus on food and nutrition policy and programs and supporting school health curriculum. This work-related experience afforded me the opportunity to cultivate a critical and complex systems lens. With this, I am cognizant of the context and culture within the school food environment and how this environment impacts students, their families, and their communities. I am also aware that socio-cultural behaviours and language vary throughout the education system from school to school and between health and education, which can strengthen or weaken the opportunities provided in the school community.
- My location as a researcher is also influenced from the perspective of my identity as a woman. As a woman, I am a mother, wife, daughter, sister and female citizen consumer. In the role of mother and wife, I am often in the role of main caregiver (due to my husband's work schedule), in which case I am the main food



decision maker - purchasing, food preparation and cooking, and clean-up - in our home. Being a mother of two daughters and one son, I am also trying to teach all three of my children the value of connecting with their food by cooking with them and growing food; just as my mother taught me. That said, I am endeavoring to remove gender biases, stereotypes, and norms. As a daughter and sister, I recall the gender roles and norms growing up in my household – my mother is the matriarch of the family, worked outside the home, and yet seemed to do it all; my father worked long hours but if he arrived home before my mother, he prepared dinner. However, my brother naturally fell into the gender role/stereotype of mowing the lawn and shoveling the driveway while I was being taught how to sew, knit, bake, and clean. While being a citizen consumer, I observe the marketing and advertising aimed at women in society and the pressures women continually face to be ‘super-women’. Furthermore, I feel a moral and ethical responsibility to be an advocate for vulnerable populations, particularly children, related to the distribution of health and education opportunities and privileges within society.

### **1.5 Situating the Study**

My previous work experiences, education, and doctoral journey have culminated in this qualitative study. For all of the above reasons, I am interested in exploring how teaching and learning processes (literacy), from context to cultural behaviour and discourse, might maximize the potential of FL in schools, and ultimately, the broader environment. I am also interested in exploring the meaning of FL within the school setting as it may mean different things to different people at different times.

## **1.6 Significance of Research**

The results of this project will contribute to the existing body of literature on FL and provide insight into how FL is conceptualized and communicated. My findings may also contribute to the development of FL measurement tools and indicators. In addition to contributing to policy and practice, the research findings will also add to the knowledge base of culture within the school food environment, specifically from a health and FL lens. In the long term, it may indirectly contribute to changing specific influences of a culture in the schools to one of providing the most comprehensive FL interventions and identifying FL domains for school aged children and youth in NS, nationally, or even internationally. Results of this research study may also contribute to the development of future FL training and education programs, future research and food and nutrition policies geared toward children and youth in NS. It will also provide insight to other jurisdictions to increase the potential for impact on children's nutrition, health, and health equity; and ultimately, social change.

## **1.7 Definitions of Key Terms**

For the purpose of this research proposal, the following key terms are introduced below for a thorough understanding:

**Culture.** Culture has been defined by a set of attributes: 1) a holistic, flexible and non-constant system with continuities among its interrelated components, including shared ideational systems (knowledge, beliefs, attitudes, values), and preferred behaviours and structural relationships (social); 2) Culture provides rules and routines that facilitate order, regularity, familiarity, and predictability; 3) Culture provides meaning in the interpretation of peoples' behaviour, items in the physical environment,

events, and occurrences that people construct and use to communicate their realities; 4) Culture is a shared phenomenon; members of a cultural group often share knowledge and meaning systems, or a common sense of reality, which is referred to as inter-subjectivity; and, 5) The meanings and interpretations provided by a cultural system not only facilitate communication between those who share various aspects of such systems, but they may also give rise to miscommunications and misunderstandings between members who are from different systems (Whitehead, 2002).

**Food Literacy (FL).** FL has many diverse definitions. For the purpose of this study, FL is defined as “the knowledge, skills, and agency of an individual to understand food in a way that they develop a positive relationship with it, including food skills and practices across the lifespan in order to navigate, engage, participate, and examine the complex food system and food environment. It is the ability to make decisions to support the achievement of personal health and advocate for a sustainable food system considering environmental, social, economic, cultural, and political components” (adapted from Cullen, Hatch, Martin, Wharf Higgins, & Shepperd, 2015, p.143).

**Health Equity.** Braveman & Gruskin (2003) declared that “equity in health is the absence of systematic disparities in health (or in the major social determinants of health) between groups with different levels of underlying social advantage/disadvantage-that is, wealth, power, or prestige” (p. 254). These social determinants of health (SDH) may be counteracted by material and environmental conditions, via public health interventions, to allow the conditions to make healthy behaviours accessible and affordable (Sadana & Blas, 2013).

**Health Literacy.** Health literacy is defined as being “linked to literacy and entails people’s knowledge, motivation and competences to access, understand, appraise, and apply health information in order to make judgments and take decisions in everyday life concerning healthcare, disease prevention and health promotion to maintain or improve quality of life during the life course” (Sørensen et al., 2012, p. 3).

**Nutrition Education.** Contento (2007) has described nutrition education as “any combination of educational strategies, accompanied by environmental supports, designed to facilitate voluntary adoption of food choices and other food and nutrition-related behaviours conducive to health and wellbeing. Nutrition education is delivered through multiple venues and involved activities at the individual, community and policy levels” (as cited in Contento, 2008, p. 1).

**Nutrition Literacy.** Nutrition literacy has been defined as “the capacity to obtain, process and understand nutrition information and the materials needed to make appropriate decisions regarding one’s health” (Silk et al., 2008, p. 4).

**School Community.** For the purpose of this study, the school community is defined as the school administrators, teachers, and staff members who work in a school; the students who attend the school and their parents and families; local residents and organizations that have a stake in the school’s success; businesses, organizations, and cultural institutions; and related organizations and groups such as parent-teacher associations, and volunteer school-improvement committees (Glossary of Education Reform, 2014).

**School Environment.** The school environment refers to those school-level variables (including social and physical environment; teaching and learning; healthy

school policy; and partnerships and services) that impact the entire school community (Joint Consortium for School Health, 2015). The school environment “plays a fundamental role in shaping lifelong healthy behaviours and can have a powerful influence on students’ eating habits” (Centers for Disease Control and Prevention, 2014).

**School Food and Nutrition Environment.** The school [food and] nutrition environment has been defined as providing “students with opportunities to learn about and practice healthy eating through available foods and beverages, nutrition education, and messages about food in the cafeteria and throughout the school campus” (Lewallen et al., 2015, p. 732).

**Social Change.** “Social change has been defined as the change in society created through social movements as well as external factors like environmental shifts or technological innovations. Essentially, any disruptive shift in the status quo, be it intentional or random, human-caused or natural, can lead to social change” (Little, 2014).

**Social Practices.** Social practices are defined as “patterns of behavior that enable us to coordinate due to learned skills and locally transmitted information, in response to resources, and whose performances are “mutually accountable” by reference to shared cultural schemas/social meanings” (Haslanger, 2017, p. 4).

## **1.8 Thesis Structure**

The presentation of this thesis follows the general structure of a doctoral thesis. The first two chapters which follow this introduction (Chapters Two and Three), provide a review of the literature and subsequent conceptual model which informed the development of the research aims. This is followed by a chapter on research methodology

(Chapter Four) and another chapter on research design (Chapter Five). The empirical findings are detailed in two chapters (Chapters Six and Seven) and the discussion is presented in Chapter Eight. This includes a discussion of the results in the context of the literature initially identified, as well as implications for policy and practice and suggestions for future research. Supporting information can be found in the Appendices which are referenced throughout the text. The final chapter offers concluding thoughts (Chapter Nine).

### **1.9 Chapter Summary**

In summary, this chapter has established this research as critical and timely. The opening sections outlined the background information in relation to current issues and concerns with food in the 21<sup>st</sup> century. The background section identified the research problem, aims, and gap. I have situated myself as the researcher, provided the significance of this study, offered definitions for key terms, and presented my thesis structure. Given the structure of this thesis, the following chapter provides a comprehensive overview of the broader societal influences related to food and the school context related to food literacy which emerged from a detailed review of the literature.

## CHAPTER 2: LITERATURE REVIEW

This chapter is focused on a review of the literature pertaining to the factors related to the disconnect between food and health; and factors related to food in the school context. The intention of this chapter is to provide context that may shape the diverse interpretations of FL; therefore, it is not intended to form an exhaustive review of these concepts nor to persuade the reader toward a fixed understanding of them.

### 2.1 Introduction

Industrialization and urbanization of the food system has had a profound effect on the food environment globally. The food system and food environment (defined in section 2.2), and an individual's relationship within the environment and system continues to evolve and intensify (Vidgen, 2016). The complexity of the links between the food system and the physical, social, economic, information and service environments in which we live play a significant role in facilitating or hindering health and food related behaviours (Cubbin et al., 2008; Institute of Medicine & National Research Council, 2013; Kirk et al., 2010). Furthermore, "unhealthy food environments foster unhealthy diets through the widespread availability of cheap, highly palatable, heavily promoted, energy-dense and nutrient-poor foods" (Swinburn et al., 2013, p. 25).

There is evidence that food choices and consumption patterns have changed with increased access to convenience foods (St-Onge, Keller, & Heymsfield, 2003) due to changing social norms (Robinson et al., 2013). These changes have been developing over time as the literature has described an "industrial eater" (Berry, 2009) leading to "passive" consumerism (Oosterveer, 2007); "culinary skills transition" (Lang & Caraher, 2001) resulting in "culinary deskilling" (Slater, 2013); and "nutrition transition" (Popkin,

Adair, & Ng, 2012) bringing about “predictable shifts in diet” (Harvard School of Public Health, 2012), as described in section 2.2. The complexities of the interactions of the above named factors have eventually led to a “disconnection” to food (Scrinis, 2007).

## **2.2. Factors Accounting for Disconnect between Food and Health**

There is compelling evidence that many factors affect the health of individuals and communities; health of individuals is not only determined by their personal and situational circumstances but also the broader environment. As such, there is a disconnect between what school aged children and youth learn about food and health in schools and what they see modeled in the environment (Raine, 2005). There are powerful societal and environmental factors and forces responsible for this disconnection. These factors and forces are constantly shifting and changing and regularly overlap creating an inherently complex public health issue. Therefore, key elaborations warrant attention when discussing FL which include: the complex food system; food environment; food culture; food security, nutrition and health; and health equity.

### **2.2.1 Food System**

The complexity of the food system is increasingly becoming an issue for society and the environment. A food system has been defined as “all the processes and resources involved in producing, processing, distributing, preparing, and consuming food and is interconnected with food supply chains, farm production practices, food waste, natural resources, health, consumer behavior, food culture, social justice, and policies” (Anderson et al., 2019, p.e2). Through increasing modernization and urbanization, food systems have dramatically changed over the past half-century. One consequence of this is that society has become disengaged and distanced from the production and distribution of



food. Hubert, Frank, & Igo (2000) state “as countries develop and move to more urbanized societies, basic knowledge and understanding of the natural environment and its interrelated systems appears to have declined” (p.525). In fact, due to technological advances related to food production, transportation, marketing and advertising, and its reach worldwide (Francis et al., 2003), children and youth, and the population at large, are losing their connection to nature, agriculture, and food production (Harmon & Maretzki, 2006; Hess & Trexler, 2011). This disconnect to food includes a lack of understanding of where our food comes from and how it is produced as well as a basic understanding of seasonality, quality and variety of foods. As such, this disconnection has created an ‘industrial eater’, defined as “one who does not know that eating is an agricultural act, who no longer knows or imagines the connections between eating and the land, and who is therefore necessarily passive and uncritical” (Berry, 2009, para. 6) giving rise to the loss of consumer hegemony (power) and deep-rooted meaning with respect to culture, social relationships, human and environmental health (Jaffe & Gertler, 2006). Furthermore, some researchers claim that people have been losing their food-preparation skills with the increased production and availability of industrial food-like products (Health Canada, 2010). While there is not enough evidence to determine if “deskilling” of the Canadian population is really taking place (Howard & Brichta, 2013), there is evidence that a portion of the Canadian population lacks adequate food skills (Slater & Mudryj, 2016). Furthermore, there is evidence that food choices and consumption patterns have changed with increased access to convenience foods (St-Onge et al., 2003), attributable to the shifting food system and environment landscape.

There are many forces that have affected the nature and scope of the food system over the years. The constantly changing conditions include: increases in global food production competing with population growth, resource degradation, climate change, droughts, flooding, disease, and war (Lang, 2009). Today's modern food system values raising production, capital investment, and industrial agriculture (Lang, 2009; Scrinis, 2007) resulting in corporations merging and controlling the food system (Scrinis, 2007). As a result, these changes have increased the global food supply. However, these changes have also introduced harmful effects on the global populations' health - some more than others; wellbeing; and the environment (Palumbo, 2016) thereby introducing inequities and health inequalities.

The global food system is encountering several environmental, societal, and structural challenges, and multiple forces have weakened farmers' cultural practices, economic self-sufficiency, and the ecological resource base (Méndez, Bacon, & Cohen, 2013). These forces have generated unsustainable patterns such as significant resource depletion, food safety concerns, and undesirable environmental impacts including plastics, in the food chain (Lang, 2009) which, in turn, play a significant role in environmental deterioration and undermines efforts to protect and enhance the health of the population. Furthermore, these unsustainable patterns result in "a food environment that encourages access to and overeating of highly caloric, highly processed foods, but discourages consumption of healthier, relatively unprocessed foods" like vegetables and fruits (Nestle, 2016, para. 7).

There is very little understanding among children and youth, and the population at large, as to where our food comes from and how it is produced. Hubert, Frank, & Igo,

(2000) state “as countries develop and move to more urbanized societies, basic knowledge and understanding of the natural environment and its interrelated systems appears to have declined” (p. 525). To test this statement, Barton, Koch, Contento, & Hagiwara (2005) conducted a qualitative study of New York City urban children’s ideas of the food system and observed that those students who were interviewed were mostly expressing their knowledge based on their way of thinking and own experiences in their homes or with television (media) rather than constructing it on school-based food and nutrition knowledge. These findings suggest a need to teach about the complex issues related to food, food systems, and food environment in schools and make the connection between food and health, in addition to the inequities within the food system and access to food.

### **2.2.2 Food Environment**

The physical, social, economic, information and service environment we live in shapes our behaviours and influences our health. Likewise, the complex food system has shaped our food environment “as there is inequitable distribution of the quality and quantity of food” (Ericksen, 2008, p. 236) which influences our eating patterns. Food environments have been defined as the “collective physical, economic, policy and sociocultural surroundings, opportunities and conditions that influence people’s food and beverage choices and nutritional status” (Swinburn et al., 2013, p. 25). Due to the food system changes related to a ‘productionistic’ and economic model (Lang, 2009) over the past half century, the food environment is inundated with nutrient-poor and energy-dense (ultra-processed) foods, inappropriate serving sizes, priority placement of ultra-processed foods, pricing and promotional strategies used to market foods (WHO, 2015) giving rise

to unhealthy eating patterns (Glanz & Sallis, 2006). In fact, “the agri-food industry has spent billions on marketing campaigns to persuade and re-educate consumers for its own purposes while claiming to respond to public demand” (Jaffe & Gertler, 2006, pp. 143–144), and the subsequent outcome is an undesirable food environment from a health, well-being, and environmental sustainability perspective. In contrast, a ‘positive food environment’ is defined as “the physical and social spaces that help to normalize healthy eating by making it easier to grow, sell, and eat good food” (Ecology Action Centre, 2015, p. 1). A positive, health supporting, food environment is a key element in a FL intervention to empower individuals to navigate the food system and food environment.

Recently, the contemporary food environment has been recognized as a determinant of community or population health (Kirk et al., 2010) since it ‘dictates’ food options (Schwartz & Puhl, 2003) which often does not “reinforce and support healthy eating behaviours” (Vanderlee & L’Abbe, 2017). Jaffe and Gertler (2006) emphasize the reality of our food environment ruling our choices via asserting that society

lack[s] the orientation or presence of mind to think of foods and food choices as something we can use to exercise real influence with respect to our own family’s health and the health of the planet. We are unlikely to be thinking about implications for hunger, for the distribution of power and control in the food chain, for local and international development, for animal welfare, or for the ecological impacts of provisioning activities (p. 157).

Many provinces in Canada have taken action on food environments (Food-EPI Canada, 2017; Health Canada, 2013) given the rise in childhood and adult obesity (Glanz et al., 2005) and associated chronic diseases. Food environments are constructed by the

“human-built and social environments” (Rideout, Mah, & Minaker, 2015) in which we live. Food environments can be categorized into the general community food environment (type, location, and accessibility of food outlets such as stores and restaurants); organizational food environments (such as child care settings, schools, recreation and sport settings, universities and colleges, workplaces and homes); and consumer food environments (this includes nutritional qualities, price, promotions, placement, range of choices, freshness, and nutritional information in the retail food outlets) (Glanz et al., 2005). Over the past decade, schools (as an organization or settings based approach) have been a targeted food environment in an attempt to protect children and youth through school food and nutrition policies, and comprehensive school health (CSH) programs such as breakfast programs, nutrition education curriculum standards, farm to school programs and school gardens, as well as fruit and vegetable programs (McKenna, 2010; Story, Nannery, & Schwartz, 2009). These programmatic strategies “demonstrate promise for supporting” children and youth in improving their dietary behaviours through food-based knowledge, skills and behaviours (Amin et al., 2018, p. 919), thereby creating an opportunity to address broader food environment factors in a FL intervention for a more sustained impact on health.

### **2.2.3 Food Culture**

Food culture has been defined as “the sum of how humans relate to food, where and how we shop, our tastes, the experience, how we get to and from the food point of contact, our conceptions of quality and normality, and our aspirations” (Lang, 2009, p. 323). The food system changes and control over agriculture and food has had a significant impact on the links between farming, culture, and food-related health (Lang,

2009) giving rise to the “nutrition transition” (Popkin et al., 2012). The overarching term coined to capture this change - nutrition transition - suggests that the food, food systems, and food environment changes have significantly impacted “food intake, food production, and rituals of eating” (Vidgen, 2016, p. 2). That said, the ways of eating and how food is viewed has been shaped by individuals, families, communities, countries, and worldwide (Vidgen, 2016). Furthermore, “new standards and expectations on eating” have been established (Vidgen, 2016, p. 9) as society is eating out more often, related to “changing social norms regarding food, ‘time-poverty’, greater participation in the paid workforce by women, longer working hours, and less in-home food preparation” (Slater, 2013, p. 617). This has been in part a ‘culinary transition’ defined as “the process in which whole cultures experience fundamental shifts in the pattern and kind of skills required to get food onto tables and down throats” (Lang & Caraher, 2001, p. 2) resulting in culinary deskilling (Slater, 2013). There is a need to better understand the intersection between the nutrition transition, culinary transition, and health status as it relates to food culture in order to implement a FL intervention that creates social change.

Food’s influence on health is not merely a product of the food system “but of culture and social values” (Lang, 2009, p. 324). Food choices are deeply embedded in our food culture and are highly complex (Karp et al., 2005) as food consumption embodies more challenges (Foran et al., 2014) such as “social relationships, environmental stewardship, responsibility, self-esteem, self-efficacy and citizenship” (Slater, 2017, p. 17) with respect to the “eating environment, food roles, strategies for mobilizing food resources, or expected food behaviours” (Gillespie & Smith, 2008, p. 337). As such, society is “‘locked in’ to unsustainable consumption patterns... [which]

flows from habits, routines, social norms and expectations, and dominant cultural values” (Jackson, 2005, p. vi). Scrinis (2007) asserts some of the concerning changes in food culture include

the standardization and loss of taste and texture of food products; the loss of traditional and locally distinct foods, cuisines and farming practices, in the face of the global homogenization (or so-called McDonaldization) of food production and consumption; and a decline of cooking and food preparation skills (p. 121).

Consequently, “local [food] knowledge is losing ground to untested technologies and practices that have yet to prove their long-term ability for sustainability. All of this is in the name of large-scale productivity that is totally abstracted from the lives of the local cultures” (Snyder, 2009, p. 275).

Colatruglio & Slater (2014) also note that the frequency of shared meals has declined which are “missed opportunities for teaching and mentoring children about essential food skills, as well as key time that could be viewed as ‘family time’ (p. 41; as cited in Deer, Falkenberg, McMillan, & Sims, 2014). These trends are being reinforced by the abundance of ultra-processed, convenience, and fast foods. Moreover, the relationship between social context and amounts of food consumed as well as influence on food choice has been established (Robinson et al., 2013); ultimately changing our relationship with food. Furthermore, while children and youth are in school, “societal messages about the role of non-nutritive food become increasingly prevalent and confusing. Candy and sweets are strongly associated with holidays and parties” (Schwartz & Puhl, 2003, p. 58) as well as fundraising, special events and sporting activities, which is a long standing tradition. This tradition is becoming more prevalent

and is now being viewed as less desirable for health. Given that today's food culture has a greater reliance and appreciation for ultra-processed, convenience, and fast foods, coupled with a decline in food preparation and cooking skills due to lifestyle changes, there is a need to focus on the role of food culture in FL interventions.

#### **2.2.4 Food Security, Nutrition, and Health**

Food security is foundational to environmental and human health. Community food security “exists when all community residents have access to enough healthy, safe food through a sustainable food system that maximizes community self-reliance, and social justice” (Hamm & Bellows, 2003, p. 37). The food system influences food security in such a way that it can affect access, availability and utilization of food, such as food safety (Nelson et al., 2016). Due to the intersection between the food system and food security, any disruption to the food system may impact food security. As such, the current climate change crisis is becoming a notable stressor which may upset some or all aspects of the food system (Nelson et al., 2016), subsequently shifting food security status, which has a profound effect on health outcomes as it is the foundation for healthy eating.

Household food security is described in *The State of Food Insecurity 2001 Report* as “a situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life” (FAO, 2002). Conversely, food insecurity has been defined as “the inability to acquire or consume an adequate diet quality or sufficient quantity of food in socially acceptable ways, or the uncertainty that one will be able to do so” (Davis & Tarasuk, 1994, p. 51), often due to financial constraints.



Vulnerable living situations can influence the ability of individuals and families to access and make healthy food choices (Public Health Agency of Canada [PHAC], 2013). In fact, evidence suggests adjusting to chronic vulnerable living situations (i.e. chronic poverty) has an influence on establishing cultural norms (Karp et al., 2005), which may in turn, affect food choice and consumption.

There is a direct relationship between accessing healthy food and the likelihood of healthier eating, healthier weights, and reduced rates of diabetes (Babey, Diamant, Hastert, Harvey, et al, 2008) indicating food secure individuals and families often have better health outcomes and weights. However, “food choice is a highly complex phenomenon influenced by the cost and availability of food and the dynamics of the family” (Karp et al., 2005, p. 2). “The social determinants of food consumption constitute another set of challenges. Beyond availability and accessibility, culturally-informed worldviews and rationalities influence consumption” (Foran et al., 2014, p. 95). Correspondingly, emerging research suggests that lack of structure and cultural practices at home have been associated with poor dietary behaviours and greater chance of overweight or obesity (Patrick, Hennessy, McSpadden, & Oh, 2013). As a result, food insecure families may also face poorer health outcomes through greater risk of chronic disease.

There is a growing public health concern related to the double burden of under- and over-nutrition, which includes “issues of both under- and over-consumption, hunger and obesity, quantity and quality” (Ashe & Sonnino, 2012, p. 1020) given that “almost 1 million people are hungry, and almost 2 billion people are eating too much of the wrong food” (Lucas & Horton, 2019). Evidence suggests there is a paradoxical finding that

those with low resources to food (i.e., food hardship and food insecurity) often experience overweight, however, the “coexistence of food insecurity and obesity is expected given that both are consequences of economic and social disadvantage” (Frongillo & Bernal, 2014, p. 284). That said, evidence suggests household food insecurity is not due to insufficient food skills (Huisken, Orr, & Tarasuk, 2017); rather, there are other “contextual factors such as social, economic, political and environmental conditions [which] can limit one’s agency and consequent capacity to make healthy choices” (Walsh, Meagher-Stewart, & Macdonald, 2014, pp. 527–528). Therefore, children facing food hardship are not simply from low-income families; middle-income and high-income families may also be subjected to food insecurity or food hardship (Hyung Hur, 2012; Mutisya, Kandala, Ngware, & Kabiru, 2015), or may not always be able to make quality decisions about food (Caraher, 2016) due to the personal and situational contextual factors in which they live, such as time, social, and financial pressures.

The importance of establishing healthy eating patterns early in life is critical and has been related to reduced risk for a variety of chronic diseases (Story & French, 2004; Taylor, Evers, & McKenna, 2005; Veugelers, Fitzgerald, & Johnston, 2005). In fact, two-thirds of deaths in Canada each year are from chronic diseases that are associated with modifiable behaviours such as dietary intake and physical activity (PHAC, 2017). More specifically, there are 48,000-66,000 Canadian deaths linked to excess weight annually (Report of the Standing Senate, Committee on Social Affairs, & Science and Technology [The Senate Report], 2016). Furthermore, there has been a rise in child and youth obesity in Canada over the years; approximately 26% of children and youth aged 2 to 17 years

are classified with overweight and 8% have obesity (Shields & Tjepkema, 2006). In NS, one in three children live with overweight or obesity (Province of Nova Scotia, 2012).

Given the increases in overweight and obesity in Canada, and resultant increases in chronic disease rates, there is a large economic burden to our health care system. Approximately \$4.6-7.1 billion is spent annually in health care and there is “a lower rate of employment as well as a higher absenteeism rate and decreased on-the-job productivity” (The Senate Report, 2016, p. 2). With higher absenteeism rates and decreased productivity in the work force, household income may be reduced. There is a strong link between food insecurity and household income in Canada and NS (Canadian Institute for Health Information, 2015); evidence suggests NS has the highest rate of food insecurity in the Canadian provinces (Statistics Canada, 2015). Given the link between food insecurity and inadequate income, it is important to consider the cost of food.

The *Food Price Report* (2018) states the driving factors that affect the cost of food include climate change, the Canadian dollar, and consumer trends. In 2019, it is projected that food inflation rates across Canada will be between 1.5% to 3.5% which means an increase in household spending of approximately \$411.00 to \$12,157.00 for the year (Charlebois et al., 2018). The increase in food costs are predominantly relative to the foods in Canada’s Food Guide whereas the price of junk foods and carbonated beverages has declined over the years. Therefore, inexpensive foods (e.g., junk foods) are often a key contributor to obesity while the above stated driving factors influence food security status.

### **2.2.5 Food, Education, and Health Equity**

Health, education, and food are fundamental for living, learning, and thriving. For that reason, it is critical that the allocation of these multidimensional issues (health, education, and food) are considered important determinants of equity. Braveman & Gruskin (2003) declared “equity in health is the absence of systematic disparities in health (or in the major social determinants of health) between groups with different levels of underlying social advantage/disadvantage—that is, wealth, power, or prestige” (p. 254). The social determinants of health (SDH) are the conditions in which people are born, grow, live, work and age (WHO, 2014) which include: income and income distribution, education, unemployment and job security, employment and working conditions, early childhood development, food insecurity, housing, social exclusion, social safety network, health services, aboriginal status, gender, race, and disability (Canadian Public Health Association [CPHA], n.d.). The SDH have a tremendous effect on food security, nutrition and health as well as educational achievement. In fact, “the SDH influence health in many positive and negative ways” (CPHA, n.d., para. 1) and “are mostly responsible for health inequities” (WHO, 2019, para. 1). The SDH may be counteracted by material and environmental conditions, via public health interventions, to allow the conditions to make healthy behaviours accessible and affordable (Sadana & Blas, 2013).

Meanwhile, globalization has been designed for economic growth and prosperity and offers remarkable potential for enhancing human health and well-being and balancing the scales of equity (Marmot, 2007). However, health inequities, within the food environment and food system, originate with deeply rooted “historical and contemporary inequities” that are often positioned within profound disparities of

political, economic, environmental, and social power (National Academies of Sciences, Engineering, and Medicine, 2017) globally, nationally, and locally. Thus, it is important to consider how the SDH and globalization between and within countries further reinforce inequalities.

Given that food and health concerns inevitably raise the issue of power, “the failure to consider access to food resources in an integrated way may lead to inequalities in nutritional opportunities among populations” (Jones & Bhatia, 2011, p. 781). In fact, “unequal access to calories and diversity gives rise to inequities in nutrition status” (Dixon et al., 2007, p. i120) between and across countries. It is essential to identify “the vital importance of social and economic factors at a collective, societal level in directly determining population health and health equity” (Baum, Bégin, Houweling, & Taylor, 2009, p. 1968). It is also important to recognize that governance structures in conjunction with complex food systems have a substantial impact on health inequities within and between countries. Furthermore, the *World Economics Situation and Prospects Report* (2019) highlights that “high levels of inequality are a major barrier to achieving the 2030 Agenda for Sustainable Development. Broadening access to education and improving its quality are crucial to redressing this obstacle” (UN DESA, 2019, p. xxiii) internationally. In view of that, school aged children and youth are “especially vulnerable to the inequitable distribution of, and access to, food” (Dixon et al., 2007, p. i21), which may in turn, create further disparities in relation to education, income, and ultimately, their livelihood. It is no surprise that addressing food systems, health, and nutrition in schools has been viewed as an important tool to remedy the new food insecurity paradigm of over and under-nutrition (Ashe & Sonnino, 2012) while

improving educational outcomes and framing equity as a priority for such emerging interventions.

### **2.2.6 Summary**

Over the past half century, our relationship with food and how we eat has changed. The food system has created an unhealthy food environment which contributes to a food culture of less conscious, or detached, consumers concerning food origins, characterised by consumption of highly processed and packaged foods. This dietary shift has created a multitude of food environment and natural/ecological problems resulting in a critical juncture for humanity with the double burden of under and over-nutrition and climate crisis. As a result, it is necessary to approach and engage with food and food systems in a more critical manner. For this reason, international efforts have been taken to encourage a global transformation of our food system, environments and culture through the *UN SDGs* and the *Decade of Action on Nutrition*. More local efforts within the school system are required to help reverse the current trends as this future generation is on target to either cultivate or hinder this societal change.

### **2.3 Factors related to Food Literacy in the School Context**

Food literacy (FL) is the concept often used in schools as the overall goal in connection with school garden initiatives, food and cooking interventions, and/or nutrition curriculum (Vaitkeviciute, Ball, & Harris, 2015). However, there is generally a limited focus on comprehensive research related to food systems, food environments, and food culture as it relates to FL in schools. In addition to the gap in research as well as in education, further literature emphasizes the need to investigate FL with diverse audiences and stakeholders (Cullen, Hatch, Martin, Higgins, & Sheppard, 2015). To situate and

substantiate this research as a significant topic of inquiry, it is essential to examine the important factors in relation to how schools and the broader school community might maximize the potential of FL in schools. These important factors are centered on the following themes: education; health education; health promotion; comprehensive school health; school food environment; school food and nutrition policy; food and nutrition education; food and nutrition teaching interventions; the role of teachers in food and nutrition; and the role of parents in food and nutrition.

### **2.3.1 Education**

Education has been recognized as a key social determinant of health since “education increases overall literacy and understanding of how one can promote one’s own health through individual action” (Mikkelsen & Ohri-Vachaspati, 2010, p. 15). Education has also been recognized as a “key health determinant of society” (Minister Philpott, 2016) given that “education facilitates citizens’ possibilities for civic activities and engagement in the political process” (Mikkelsen & Ohri-Vachaspati, 2010, p. 15) and “forms the new members of society – children and youth” (Hahn & Truman, 2015, p. 672). Education is both a process and a product (Dewey, 1916). The process of education happens both inside and outside of school whereas the product of education is “the array of knowledge, skills, and capacities (i.e., intellectual, socio-emotional, physical, productive, and interactive) acquired by a learner through formal and experiential learning” (Hann and Truman, 2015, p. 657).

There is evidence that suggests educational attainment leads to better health outcomes. “Education improves health because it increases effective agency, enhancing a sense of personal control that encourages and enables a healthy lifestyle. Education’s

beneficial effects are pervasive, cumulative, and self-amplifying, growing across the life course” (Mirowsky & Ross, 2005, p. 212). A person who feels in control of their own lives and understands societal constraints may tend to seek out information to influence their lives and improve their health outcomes as well as take social action to address SDH for betterment of community and broader society.

### **2.3.2 Health Education**

Health education originated in the early nineteenth century by the pioneer Mayhew Derryberry of the United States; though the field did not start to advance as a distinctive discipline until the 1940s (Auld & Gambescia, 2016) when Derryberry “became chief of the newly formed Division of Health Education in the Public Health Service in 1941 and began assembling a talented team of behavioral scientists to study the nexus of behavior, social factors, and disease” (Allegrante, Sleet, & McGinnis, 2004, p. 370). The WHO (2019) defines health education as “any combination of learning experiences designed to help individuals and communities improve their health, by increasing their knowledge or influencing their attitudes.” In essence, health education is a process aimed at improving an individual’s health behaviours through knowledge in order to make intelligent choices (Minelli & Breckon, 2009). That said, “education alone is not sufficient to facilitate or enable behaviour change” (Gill & Boylan, 2012, p. 55); there is a need for a comprehensive approach. Furthermore, Nutbeam (2000) asserts there is a link between health education and improving health literacy (described in Chapter Three).

Health education has been categorized into three approaches: traditional health education; educational health education; and new wave education (Seymour, 1984). The



'old' approach to health education is termed traditional health education. This approach concentrates on personal responsibility for health and disease prevention (Gastaldo, 1997) and was delivered by means of information on health issues and campaigns (Seymour, 1984). "In [the] traditional approach to health education, the healthy choice is the only choice" (Gastaldo, 1997, p. 116). The educational health education approach was delivered via training professionals, curriculum development, and community health work (Seymour, 1984). Both the traditional and educational health promotion approaches still exist today with the viewpoint that if we provide health education, behaviour changes will follow. The 'new wave education' approach to health education has been termed radical health education by Gastaldo (1997); this approach focused on empowering individuals to control their own health (Gastaldo, 1997). "The concept of radical health education figures in movements for health promotion, new public health and public health policy. It is also committed to combatting social inequality in a broad way and promoting community participation in health issues" (Gastaldo, 1997, p. 117). This new approach to health education considers the SDH, health equity and recognizes the need for systems changes. This "view of health education as an instrument of social change has been renewed and invigorated during the past decade" (Glanz, Rimer, & Viswanath, 2015, p. 11); however an individual focus still remains since health education involves providing individuals with information to improve one's health.

### **2.3.3 Health Promotion**

Health promotion was conceived by Henry E. Sigarist in 1945 (Kumar & Preetha, 2012) and involves a range of activities (including the narrower focus of health

education) to empower individuals and/or communities to achieve improved and/or enhanced health outcomes. Health promotion is defined as the process of

enabling people to increase control over their own health. It covers a wide range of social and environmental interventions that are designed to benefit and protect individual people's health and quality of life by addressing and preventing the root causes of ill health, not just focusing on treatment and cure (WHO, 2016, para. 1).

The Ottawa Charter on Health Promotion was conceived in 1986 and is a landmark document for health promotion actions globally. This document recognizes "health is a positive concept emphasizing social and personal resources, as well as physical capacities. Therefore, health promotion is not just the responsibility of the health sector, but goes beyond healthy life-styles to well-being" (WHO, 2019, para. 3). Furthermore, "health promotion outcomes represent those personal, social, and structural factors that can be modified in order to change the determinants of health" (Nutbeam, 2000, p. 261). As such, the underlying principles of health promotion include the SDH and levels of prevention (Taylor, O'Hara, & Barnes, 2014), including the foundational requirements as outlined in the Ottawa Charter on Health Promotion: peace, shelter, education, food, income, a stable eco-system, sustainable resources, social justice, and equity (WHO, 2019).

Health promotion has been designated as a core component of public health (Hubley, Copeman, & Woodall, 2013; Tang et al., 2009) and is more relevant today than ever (Kumar and Preetha, 2012). The Shanghai Declaration formally recognized the importance of health promotion in 2016 and stated health promotion will be achieved

through the 2030 Agenda for SDGs. This Agenda identifies “ensuring healthy lives and promoting well-being for all at all ages” as one of the most important indicators of progress on our collective journey over the next decade (Kickbusch & Nutbeam, 2017, p. 3). This is focused on informing individuals to take control of their modifiable SDH, which are mostly responsible for health inequities (WHO, 2014) and also includes public policy (Nutbeam, 2006). For that reason, health education and public health policy, as components of health promotion in the school environment, are important to create and support equity and social justice for all. Furthermore, it is important to create protective factors to eliminate the ‘achievement gap’ in schools, often related to SDH.

#### **2.3.4 Comprehensive School Health**

During the past 40 years, “there have been several international initiatives to define and advance the role of schools in promoting and protecting health” (Tang et al., 2009, p. 69). Comprehensive school health (CSH), also known by other terminology such as coordinated school health or health promoting schools, refers to those school-level variables (including social and physical environment; healthy school policy; teaching and learning; and partnerships and services) that impact the entire school community (Joint Consortium for School Health, 2015). The essential components of CSH interventions for program success in schools include “tailoring programmes to individual schools’ needs; aligning interventions with schools’ core aims; working with teachers to develop programmes and increase ownership; and providing on-going training, support and communication” (Langford, Bonell, Jones, & Campbell, 2015, p. 1) thereby reflecting local, cultural, organizational and political context. It is also important to recognize that parents play an essential partnership role in the school community (Ministry of Ontario,

2010) in order to support CSH interventions seeing as Epstein (1995) and Mapp & Kuttner (2013) suggest that “schools should not operate as entities separate from the family and community contexts and that certain goals...are best achieved through collaborative action and support” (as cited in Stefanski, Valli, & Jacobson, 2016, p. 155). However, despite schools’ focus on improving community involvement or family engagement, they may not see the value in improving health beyond parental involvement in homework or classroom assignments (Hunt, Barrios, Telljohann, & Mazyck, 2015).

There is a strong research base underpinning CSH as a foundation to support both health and educational outcomes in schools (McIsaac, Hernandez, Kirk, & Curran, 2016). In fact, it has been identified as an “essential public health framework for school health, though it has not resonated as strongly with the education sector” (Lewallen, Hunt, Potts-Datema, Zaza, & Giles, 2015, p. 729). Establishing and sustaining a healthy school environment through CSH requires a school climate and culture that reinforces health promotion efforts. School climate has been defined as “the quality and character of the school. It is based on patterns of student, parent, and school personnel experiences within the school and reflects norms, goals, values, interpersonal relationships, teaching and learning practices, and organizational structures” (National School Climate Council, 2007, p. 5) whereas school culture is defined as the shared values, rules, belief patterns, teaching and learning approaches, behaviours, and relationships among or across the individuals in a school (Cakiroglu, Akkan, & Guven, 2012) to reflect social norms, traditions and expectations. The lack of a “consistent, comprehensive, and systems-based understanding and concomitant planned approach for school health promotion in Canada”

is concerning and seems like a big challenge relevant to FL in schools (McCall & Laitsch, 2017, pp. 246-267). Therefore, supporting and sustaining “a systematic, integrated, and collaborative approach to health and learning” (Lewallen et al., 2015, p. 730) while further investigating the differences and similarities between climate and culture is fundamental to cultivating a healthy school environment.

Undoubtedly, there is a need to better align health and education in schools, and in particular the integration is essential to support FL interventions. Teaching and learning about health, more specifically food, requires a focus on the broader supportive environment in addition to the individual level factors (Fitzgerald & Spaccarotella, 2009), often associated with literacy in the classroom and programmatic strategies in schools.

### **2.3.5 School Food Environment**

It is recognized that the CSH approach in the school food environment “plays a fundamental role in shaping lifelong healthy behaviours and can have a powerful influence on students’ eating habits” (Centers for Disease Control and Prevention, 2014, p. 1). Therefore, the need to address the school food environment holistically including “meaningful policy initiatives” (Kubik, Lytle, Hannan, Perry, & Story, 2003, p. 1171) has been recognized. In fact, since the early 1990s, there has been a significant focus on school food interventions that go beyond changing individual behaviours to establish a healthy, supportive school food environment (Weschler, Devereaux, Davis, & Collins, 2000) such as food policies, breakfast programs, nutrition education curriculum standards, farm to school programs and school gardens, as well as fruit and vegetable programs (McKenna, 2010; Story et al., 2009). Many of these programs are elements designed to enrich FL knowledge, skills and abilities. The most effective intervention

practice has included approaches that combine traditional health education with more comprehensive, school-wide approaches leading to the development of a supportive physical, social and learning environment while bringing together families, local communities, and organizations in the broader context of school communities (Tang et al., 2009). This is an important aspect of CSH and fundamental to advancing public health. However, Weaver-Hightower (2011) is convinced that food in schools requires additional attention from the educational community.

Recently, a systematic review was conducted on school food environment interventions and it was noted that modification of the school food environment (including policy and program changes) can have a positive impact on healthy eating behaviours, even without accompanying education or promotion actions (Driessen, Cameron, Thornton, Lai, & Barnett, 2014). However, the implementation of comprehensive initiatives within the school food environment varies from school to school depending on socio-economic status, religion, leadership, enrollment, language, physical school structure, and community support (Veugelers & Schwartz, 2010). Given the variations of school food environments, and the overwhelming nature of creating systems change, “many schools have not implemented changes to improve the school food environment” (Turner & Chaloupka, 2012, p. 1837). As such, many students do not eat school food for the following reasons: access, availability, affordability, acceptability, and attitudes (Caraher, et al., 2016). It appears the scope and depth of school food interventions as it relates to the school food environment has the potential to scale-up and be more equitable.

### **2.3.6 School Food and Nutrition Policy**

Research confirming the significance and health benefits of a comprehensive school nutrition approach is well documented in the literature (Leger, 1999; McKenna, 2010; Veugelers & Schwartz, 2010; Wang & Stewart, 2013). Taking into account shifting social norms and aspiring to transform culture and the physical environment to reinforce healthy behaviours, healthy public policies such as school food and nutrition policies (SFNPs), standards for foods and beverages served and sold in schools, have been developed and implemented (Weschler et al., 2000). Successful adoption and implementation of these policies require support from all members of the school community such as teachers, principals, students and parents (Agron, Berends, Ellis, & Gonzalez, 2010; Mâsse, Naiman, & Naylor, 2013; Vine & Elliott, 2013) while targeting a systems level approach (McIsaac et al, 2019) to be more successful. Additionally, the SFNP should be “overseen by an advisory group representative of the broader school community” (Kubik et al., 2003, p. 1171). Moreover, there are favorable links to diet quality, active lifestyles, and body weight with a comprehensive school nutrition approach (Veugelers et al., 2005) of which SFNPs are situated. As such, school food extends beyond the provision of food, and therefore “should be understood in terms of social learning, providing the opportunity...to learn a range of skills including [those] necessary to make positive food choices in relation to healthy eating” (Harper, Wood, & Mitchell, 2008, p. 1) encompassing a comprehensive school food approach.

In Canada, SFNPs or guidelines have been implemented by provinces and territories over the past decade. The intent of the policies or guidelines are to improve

school food environments and support healthy eating while outlining requirements or recommendations for serving and/or selling food and beverages in the school environment. McKenna (2010) conducted a review of policy components to support healthy eating and emphasizes “comprehensive [school food and nutrition] policies can address all aspects of school food, including the foods available, the food environment, health education, health services and counseling, and family and community outreach” (p. S16). Comprehensive SFNPs have the potential to deliver consistent health reinforcing messages inside and outside the classroom. However, with little accountability structure attached to SFNPs, they are considered “a symbolic policy instrument [which] serves the primary function of articulating aspirations for social betterment (e.g., improved child health) but will not necessarily lead to implementation of any new actions (e.g., changes in school food availability or better funding for nutrition instruction) on the ground” (Shroff et al., 2012, p. 223). Furthermore, policy interventions have had minimal impact on the school food environment with a need for policy change to “speed the pace of improvement” (Turner & Chaloupka, 2012, p. 1380). To do so, a focus on other aspects of the school food environment, such as school food culture, is necessary.

### **2.3.7 School Food and Nutrition Education**

Education has been viewed as an essential component of health promotion and disease prevention for many years. Both educators and health professionals have recognized the role schools and teachers can play in promoting health. In fact, health education became a part of the school curricula in the early 19<sup>th</sup> century (Butler, 2001). Health education, a component of CSH, is an important aspect in the development of



healthy, well-educated, and productive citizens (Hechinger, 1992). Traditionally, school-based health education programs focused on the social context of behavioural decisions and helping people to develop personal and social skills required to make positive health choices (Nutbeam, 2006). However, “the demands of the 21<sup>st</sup> century require a new approach to education, policy and practice – a whole child approach to learning, teaching, and community engagement” (Association for Supervisors and Curriculum Development, 2007, p. 2) which extends the notion of health education to include broader influences such as ecological, economic, social, political and cultural components. Indeed, teaching and learning about health, more specifically food, requires a focus on the broader supportive environment in addition to the individual level factors (Fitzgerald & Spaccarotella, 2009), often associated with literacy in the classroom and programmatic strategies in schools. This demands critical thinking skills and attention to ethical responsibilities required by the complex environment in which we live; thereby presenting a remarkable opportunity to embed FL in the school environment and curriculum through situated social practices.

Teaching food and nutrition knowledge and skills within the education system is important, given that children and youth are not always provided with food and nutrition knowledge and skills at home (Health Canada, 2010). The notion of nutrition education has been rooted in the public health sector with a narrow nutrient-based information dissemination focus that requires reframing to include individual, community and policy (Contento, 2008). In recent years, the traditional form of nutrition education has been challenged to place more emphasis on putting food and nutrition knowledge into practice by way of competencies; this is becoming known as FL education (Pendergast, Garvis, &

Kanasa, 2011; Worsley, 2015). Yet, FL is not a named outcome or indicator in most school curricula across Canada. Instead, nutrition education (a component of FL) is an educational outcome or indicator in health education in schools (St Leger, Young, Blanchard, & Perry, 2009). Teaching about complex issues related to food that link food with its impact on both the body and the environment (another component of FL) often falls within science curricula (Barton et al., 2005) whereas food preparation and cooking skills (another element of FL), though not mandatory, are most often taught in home economics curricula (Lichtenstein & Ludwig, 2010). Still, students generally receive limited food and nutrition instruction per year (Kann, Telljohann, & Wooley, 2007) as traditional subject matter (English and mathematics literacy), growing class sizes, and decreasing funding all compete for instructional time (Stein, 2005).

Nevertheless, the success of food and nutrition education in schools is not certain of the school environment alone (FAO, 2005) as there are other factors shaping children and youth's beliefs, values, and practices towards their health and well-being (National Research Council & Institute of Medicine, 2004; Tinsley, 2003) in the broader environment. In fact, "environmental factors have the potential for a more sustained impact on health outcomes than programmatic strategies" (Health Canada, 2013, p. 5). Therefore, it is imperative to embrace a CSH approach in which both individual (literacy and programmatic strategies) and supportive environmental strategies within a multidimensional and multicomponent FL intervention in schools, engaging teachers and the whole school community, are supported to enhance learning and living towards health literacy, nutrition literacy, and overall FL.

### **2.3.8 Food and Nutrition Teaching Interventions**

Teaching interventions that fail to link food and nutrition knowledge, skills, and critical thinking have been largely ineffective (Lichtenstein & Ludwig, 2010). Effective food and nutrition education includes multiple components: 1) knowledge and skill building to facilitate positive behaviour change; 2) environmental and policy changes to make the healthy choice the easy choice; and, 3) integrated initiatives to build support and capacity (Food and Nutrition Service, 2010, p. 4). Several school food programs have been initiated globally, and within Canada, over the past several years to address the deficits of food access, knowledge, and skills such as breakfast programs and standards, nutrition education curriculum standards, farm to school programs and school gardens, composting programs, as well as fruit and vegetable programs (McKenna, 2010; Story et al., 2009). Many of these programs have key elements designed to address these deficits or enrich already existing FL knowledge and skills and show promise in helping increase aspects of children's FL (Hernandez, Engler-Stringer, Kirk, Wittman, & McNicholl, 2018). However, it has been suggested that "high levels of declarative [facts] knowledge alone [does] not predict increased participation in sustainable [food] behaviours" (Redman & Redman, 2014, p. 147) but that procedural [interactive] and social knowledge increase participation in sustainable food behaviours, thereby demonstrating "the need to incorporate diverse domains of knowledge into our education strategies" (Redman & Redman, 2014, p. 153). Mechanisms to do this include conscious role modeling, building in practices in the classroom daily, and integrating practices into the whole school (Redman & Redman, 2014).

Fittingly, several studies have provided evidence of food and nutrition interventions (i.e. cooking, school garden, nutrition based education in health curriculum, and food-based science curriculum) by teachers in the classroom that have been positively associated with increased nutrition knowledge and skills (Carraway-Stage, Hovland, Showers, Díaz, & Duffrin, 2014; Davis, Spaniol, & Somerset, 2015; Dunton et al., 2014; Fahlman, Dake, McCaughtry, & Martin, 2008; Hersch, Perdue, Ambroz, & Boucher, 2014; Vigden & Gallegos, 2012). School garden and cooking interventions were associated with increased food and nutrition knowledge and self-efficacy in elementary children (Carraway-Stage et al., 2014) and young adults (Vigden & Gallegos, 2012) as well as positive social and experiential learning through growing and cooking food (Libman, 2007). However, these studies did not incorporate curriculum, school gardens, and cooking interventions as a multi-component FL intervention; nor was there an interconnected approach with a multi-component FL intervention and supportive environments in schools. This provides an interesting opportunity to further investigate effective teaching practices related to multi-component FL interventions in schools.

### **2.3.9 Role of Teachers in School Food and Nutrition**

Food literacy “as a cornerstone of health, should be promoted as being of equal importance to math and science, and essential for long-term academic and career success” (Slater, 2013, p. 623) indicating teachers have a significant opportunity to raise the bar on school based FL. While teachers are in a powerful position to influence students' eating habits through food and nutrition education, positive role modeling, and curbing unhealthy classroom food practices (Byrne et al., 2012; Kupolati, MacIntyre, & Gericke, 2014; Rossiter, Glanville, Taylor, & Blum, 2007; Yager & O’Dea, 2005), they

also play a critical role in enhancing and living towards better health literacy, nutrition literacy and FL through reinforcing supportive environments in and around the school community via active, experiential teaching practices. Progressive education theorists, John Dewey (1859-1952), Carl Rogers (1902-1987), and David Kolb (b. 1939), acknowledged that experiential learning allows learners to create meaning through direct, real-life experiences and offers a more student-centered approach for life-long learning (Northern Illinois University, n.d.). Therefore, teaching and learning ought to be student-centered utilizing various pedagogical methodologies (including critical pedagogy) that align with Piaget's stages of development: 5-7 year old's are at the *pre-operational stage* which is highly individualistic; 7 years and up are in the *concrete operations stage* which is more relationship oriented; and ages 11 and up fall into the category of *formal operations stage* which is the ability to understand the effects of choices on their health, family, community and the environment (Contento, 1981). Moreover, providing "connections to current interests and concerns"(Coffman, 2012, p. 3) motivates individuals to learn. Applying Bloom's Taxonomy (1956), which offers a six-cognitive level framework to move from lower level to higher level thinking, "provides opportunities for teachers to incorporate inquiry learning into their lessons beyond...knowledge and comprehension" to more interactive and critical approaches to learning (Coffman, 2012, p. 4).

A few helpful interactive and critical thinking strategies to support building food and nutrition knowledge and skills in the school environment may include taste testing, cooking, gardening, breakfast program involvement, farm visits, and food media deconstruction. However, a qualitative study (Kupolati, Gericke, & MacIntyre, 2015)

explored teacher perceptions on the impact of nutrition education on learners' eating behaviours; the findings suggest school support for nutrition education is limited and there is a need to strengthen teachers' capacity to model positive eating behaviours. Furthermore, research has found that teachers do not generally engage in interactive methods such as experiential, hands-on, active learning (Ennett et al., 2003) as it is not easy to facilitate (Arnold, Warner & Osborne, 2005) due to lack of instructional time, parent support, school/board leadership, complexity of the program and teacher self-efficacy (Roberts et al., 2007; Perera, Frei, Frei, Wong & Bobe, 2015 ). Despite these challenges, a recent study presented suggestions from school stakeholders to improve FL education in schools: these include incorporating relevant and up-to-date content, the presence of strong practical components, enforcing FL as a required subject area or incorporating FL concepts into mandatory core subjects (Nanayakkara, Margerison, & Worsley, 2018). As such, the teacher plays a significant role in transferring FL knowledge, skills and attitudes.

### **2.3.10 Role of Parents in School Food and Nutrition**

Parents and family “play an important role in shaping children’s habits, including eating habits” (Vaughn et al., 2016, p. 99). Parents and family behaviours or actions, whether intentional or unintentional, influence children’s attitudes, behaviours or beliefs. This is known as parenting practices (Vaughn et al., 2016, p. 99). There are contextual factors, such as demographics, acculturation, education, income, and food security that may influence “whether parents adopt certain food parenting practices” (Vaughn et al., 2016, p. 111) and how these practices are implemented.

Food parenting practices also influence school food and nutrition given that parents have a fundamental role to play in improving the nutritional quality of meals served at schools (Ohri-Vachaspati, 2014) through parental involvement and engagement (Ministry of Ontario, 2010; Spencer, Hood, Agboola, & Pritchard, 2018). With respect to food and nutrition education, it is important that parents understand there are a number of factors influencing their child's ability to follow dietary guidelines, and parents also require FL skills to make dietary changes (Clelland, Cushman, & Hawkins, 2013, p. 2). The partnership between parents, teachers, and schools is imperative to foster successful school food interventions (Vereecken, van Houte, Martens, Wittebroodt, & Maes, 2009) and to develop FL. There is also a risk that some school food and nutrition programs, policies, and interventions, such as teaching healthy eating in schools and school food policies, can create further worry and guilt of parents and families (Benton, 2004). As important as parents and families are for parental support and healthy food practices, the larger societal context should be considered which include parental time constraints (Ickes, Mahoney, Roberts, & Dolan, 2016), increased dining out, prolific media messages (Benton, 2004) as well as parental access and affordability of foods (Hernandez, Engler-Stringer, Kirk, Wittman, & McNicholl, 2018). Therefore, it is crucial that school food and nutrition programs, policies, and interventions should consider the needs and interests of parents and families, teachers, and schools (Pérez-Rodrigo & Aranceta, 2003) in order to be successful.

## **2.4 Chapter Summary**

Collectively, a variety of factors create a complex system in which FL can be challenged more than it is supported within the school context and more broadly in

society. What is needed is a more critical exploration into how FL is conceptualized and communicated in order to challenge the status quo. Therefore, it is important to consider the historical, political, social, environmental, economic and situational realities that contextualize FL. With this lens, we can begin to shift away from the individualistic approach to FL that dominates society and consider FL in a more holistic approach.



## CHAPTER 3: CONCEPTUAL MODEL

The first two chapters outlined the challenges society faces with reference to a food crisis; the disconnect between food and health; as well as the school food and nutrition context. I will now discuss context of development, notion of literacy, as well as the relationship between health, nutrition and FL; examine the FL paradigms; limitations of current definitions; and different components of FL; and conclude this chapter by presenting my proposed conceptual model to demonstrate the interdisciplinary scope of FL and why it must be interpreted as such.

### 3.1 Context of Development

In order to understand literacy, one must first understand human development and learning. Urie Bronfenbrenner, a developmental psychologist theorized the “spheres of development”, entitled *Bronfenbrenner’s Ecological Model of Human Development*. This model has been widely used in public health and educational research. Bronfenbrenner (1979) asserts human development occurs throughout various settings and each of these settings intersect, contributing to the ecological nature to his theory.

Bronfenbrenner’s theory has three overarching developmental contexts: primary development (family), outside developmental contexts (such as school and broader society), and the social intersections between them. The primary developmental context (the family) allows a child to “observe and engage in ongoing patterns of progressively more complex activity jointly with or under the guidance of persons who possess knowledge and skill not yet acquired by the child and with whom the child had developed a positive emotional relationship” (Bronfenbrenner, 1979, p. 60). The secondary developmental context is one in which “the child is given opportunity, resources, and

encouragement to engage in the activities he or she has learned in primary developmental contexts, but now without the active involvement or direct guidance of another person possessing knowledge and skill beyond the levels acquired by the child” (Bronfenbrenner 1979, p. 60); this is often situated in the child care or school setting. The third developmental context involves the intersection between home environment and outside settings (Bronfenbrenner, 1979), in which the socio-cultural context of generating connections between family life and outside settings allows a child to “construct their own meanings, beginning with the beliefs, understandings, and cultural practices” (National Research Council, 2000, p. 136) developed at home. This process of creating meaning is pivotal to the development of literacy (Luongo-Orlando, 2010, p. 9).

### **3.2 Notion of Literacy**

Literacy is central to education and the term itself is both ‘complex and dynamic’; it has evolved considerably since its original meaning “to be ‘familiar with literature’ or, more generally, ‘well educated, learned’” (United Nations Educational, Scientific and Cultural Organization [UNESCO], 2006, p. 148). The traditional notion of literacy has been considered a cognitive skill in which case an individual decodes written language (Slater, 2013); this has been viewed as a “fixed, individualistic and psychological ability” (Atkins, 2001, p. 11; as cited in Miyata, 2017) which limits the different ways of making meaning. However, over the past half-century, literacy has matured, to include multiple literacies, due to “technology increasing the intensity and complexity of literate environments” (National Council of Teachers of English [NCTE], 2008) resulting in “direct implications for approaches to practice and policy” (UNESCO, 2006, p. 148). That said, “traditional notions of literacy continue to persist within Canadian schools as

linear and text-based” (Giampapa, 2010 p. 411) despite the changing landscape of literacy.

Given the concept and definition of ‘literacy’ has evolved over the years with varying perspectives and still no consensus, it’s not surprising that we see a lack of a shared definition of FL which emerges from understandings of literacy and health (also lacking one universal definition). In fact, Barton (2007) asserts identifying a precise definition of literacy may be an impossible undertaking. Despite the evolving, dynamic nature of defining literacy, four understandings of literacy have appeared in the literature which align with Pace’s (1982) understanding of literacy as both a process and a product: 1) literacy as an autonomous set of skills; 2) literacy as applied, practiced and situated; 3) literacy as a learning process; and, 4) literacy as text (UNESCO, 2006). Sørensen et al. (2012) assert literacy also includes contextual and societal transformation. Therefore, literacy can be viewed as the ability to construct meaning in any given context (Pahl & Rowsell, 2005), which is embedded in social practices. Barton & Hamilton (1998) support the social perspective of literacy:

Literacy is primarily something people do; it is an activity, located in the space between thought and text. Literacy does not just reside inside people’s heads as a set of skills to be learned, and it does not just reside on paper, captured as text to be analyzed. Like all human activity, literacy is essentially social, and it is located in the interaction between people (p. 3).

As such, a literate person must possess a wide range of abilities and competencies in the 21st century (NCTE, 2008) identified as multiliteracies; this concept of multiliteracies is inherently complex and social.

It is important to acknowledge the term multiliteracies identifies students' worldviews as a key component of their literacy development (New London Group [NLG], 1996) and is suggestive of a holistic approach to literacy comprising the "mind, society and learning" (NLG, 1996, p. 83). In fact, the original intent of multiliteracies was a pedagogical approach created for teachers in elementary and secondary schools (Cope & Kalantzis, 2000), however with the changes in society due to globalization and the advancement of technology, our understanding of literacy and literacy practices are continually being challenged. For that reason, health, and by extension, nutrition and food literacy have emerged in recent years as specific components within literacy.

### **3.2.1 Health Literacy**

There has been an increased awareness of the correlation between literacy and health with recent public health actions and interventions to promote health equity (Gillis, 2016). The term 'health literacy' was first coined in the 1970s and gained attention from education and health care but has since expanded its scope and depth to include public health. In the early days of health literacy, there was a primary focus on "an individual's capacity (and motivation to learn) and the resources provided by the health care system" (Baker, 2006, p. 878). However, Nutbeam (2000) acknowledged health was not only "influenced by individual characteristics and behavioural patterns (lifestyle) but continues to be significantly determined by different social, economic, and environmental circumstances of individuals and populations" (p. 260). This is consistent with the emergence of health promotion thinking over the past 40 years and, in particular, SDH discourse.

Health literacy's importance is increasingly being recognized as a means to "meet the complex demands of health in modern society" (Sørensen et al., 2012) though, there is "no universally shared definition" (Gillis, 2016, p. 87). In Canada, an expert panel on health literacy adopted the following health literacy definition: "the ability to access, understand, evaluate and communicate information as a way to promote, maintain and improve health in a variety of settings across the life-course" (CPHA, 2008, p. 11). Sorensen et al. (2012) tried to address the issue of competing definitions of health literacy through research which focused and resulted in an integrated health literacy definition and framework. While "the current health literacy movement seeks to improve health outcomes and reduce health disparities through improved health communication systems and health education programs" (Freedman et al., 2009, p. 446), it is imperative that "communication...draw[s] upon personal experience, invite[s] interaction, participation and critical analysis" (Nutbeam, 2008, p. 2075) which would include functional, communicative/interactive and critical health literacy in Table 1 (Nutbeam, 2000).

***Table 1. Functional, Interactive, and Critical Health Literacy (Nutbeam, 2000)***

Functional health literacy	Basic health literacy skills that are sufficient for individuals to obtain relevant health information and apply that knowledge to a limited range of prescribed activities.
Interactive health literacy	More advanced literacy skills that enable individuals to extract information and derive meaning from different forms of communication; to apply new information to changing circumstances; and to interact with greater confidence with information providers such as health care professionals.
Critical health literacy	Most advanced cognitive skills which, together with social skills, can be applied to critically analyze information, and to use this information to exert greater control over life events and situations.

This “typology for health literacy...has relevance to health promotion practice, including implications for framing [nutrition and] food literacy” (Gillis, 2016, p. 89).

### **3.2.2 Nutrition Literacy**

Evidence suggests “health literacy skills were found to correlate with numerous nutrition-specific skills such as estimation of portion sizes, understanding of nutrition labels, and seeking of and trust in nutrition information sources (Carbone & Zoellner, 2012). The connection between health and nutrition literacy surfaced since individuals with low literacy and numeracy levels are more likely to have poorer diet and health outcomes (Higgins, Lavin, & Metcalfe, 2008). Nevertheless, Kickbush (2001) has highlighted that the health literacy construct is complex; Velardo, (2015) notes “it can mean many different things for different people” (p. 386). Correspondingly, research has found the following concrete examples of health literacy application in nutrition knowledge and skills can include: knowledge of macronutrient intake, food groups, food composition, combined with basic math and measurement competencies, as well as the ability to understand nutrition concepts if an individual is presented with a disease that has nutrition implications (Gibbs & Chapman-Novakofski, 2012); this echoes Velardo’s statement that it “can mean many different things for different people” (2015, p. 386).

Recently, a systematic review found six original definitions of nutrition literacy; most of the definitions have “described the abilities necessary to obtain and understand nutrition information” (Krause, Sommerhalder, Beer-Borst, & Abel, 2018, p. 381) whereas,

All definitions of nutrition literacy centered on an individual’s cognitive capacities and strongly emphasized basic literacy and numeracy skills needed to

understand and use information about nutrition. They argue that without these skills people cannot access and understand nutrition information and thus cannot build on nutritional knowledge, which is one of the keys to healthier eating practices (Krause et al., 2018, p. 381).

Parallel to health literacy, “three cumulative levels of nutrition literacy referred to as ‘functional’, ‘interactive’ and ‘critical’ nutrition literacy” (Guttersrud, Dalane, & Pettersen, 2014, p. 877) have been developed, as shown in Table 2. Gillis (2016) notes “nutrition literacy tends to align with the clinical [individual] approach to health literacy...rather than a health promotion context” (p. 95). Furthermore, nutrition literacy often takes the form of nutrition education to increase knowledge and practical skills. Murimi (2013) points out that “while nutrition education focuses on food intake and how the body utilizes nutrients for growth, development, and health” (p. 195), this limits the focus to individuals and doesn’t reflect the two sided approach to HL which looks beyond individual skills to demands and complexities of the systems through which information is provided (Pleasant et al., 2016) as there is a far broader ‘scope’ related to FL.

***Table 2. Functional, Interactive, and Critical Nutrition Literacy (Guttersrud, Dalane & Pettersen, 2014)***

Functional nutrition literacy	Proficiency in applying basic literacy skills, such as reading and understanding food labelling and grasping the essence of nutrition information guidelines.
Interactive nutrition literacy	More advanced literacy skills, such as the cognitive and interpersonal communication skills needed to interact appropriately with nutrition counsellors, as well as interest in seeking and applying adequate nutrition information for the purpose of improving one's nutritional status and behaviour.
Critical nutrition literacy	Proficiency in critically analyzing nutrition information and advice, as well as having the will to participate in actions to address nutritional barriers in personal, social and global perspectives.

### **3.2.3 Food Literacy**

Food literacy has been explored as a “sub-concept of health literacy”, but it has recently emerged “as a relevant concept in its own right” (Gillis, 2016, p. 98). Food literacy (FL), which has evolved from food and nutrition knowledge and skills, is an evolving term fundamental to both health and education as it “is currently discussed as an aim of food education in the western world, partly inspired of a fundamental literacy understanding and partly of health literacy or other related literacy areas to food” (Benn, 2014, p. 13). A recent scoping review examined 38 novel FL definitions which demonstrated the breadth and depth of meanings that exist in health and education research (Truman, Lane, & Elliott, 2017). However, as often as FL is defined and referenced, there is no common understanding of this construct. Existing definitions vary greatly - repeatedly interrelating nutrition education, improved nutrition abilities and cooking skills, and often reflect the interests and discipline specific context of those involved in developing them with a primarily narrow interpretation while missing the opportunity to connect “well-being at both the individual and collective level” (Palumbo, 2016, p. 104).

Given these varying definitions of FL (akin to health literacy), it is not surprising that programs, practices, and policy initiatives are inadequate or compete against each other (Finley et al., 2017; Malloy-weir, Charles, Gafni, & Entwistle, 2016). Researchers, practitioners and policy makers’ expertise may be adopted for diverse contributions to this evolving field of inquiry and practice; yet advancing the outcomes of FL, like improving health and well-being, requires some shared momentum and vision across the field (Caldwell, 2005; Vigden & Gallegos, 2014). This work has begun; Truman et al.



(2017) found that despite the many novel yet diverse FL definitions, there are six common themes weaved throughout these conceptualizations: knowledge, emotions, skills/behaviours, health/food choices, culture, and the broader food system.

### **3.3 Food Literacy Paradigms**

There are two paradigms in which FL is situated. Various definitions reflected in the literature frame FL to be apolitical, highly individualistic, or do not overtly consider the larger, broader social or ecological context (Block et al., 2011; Bublitz et al., 2011; Cullerton, Vigden, & Gallegos, 2012; Fordyce-Voorham, 2011; Howard & Brichta, 2013; Kolasa, Peery, Harris, & Shovelin, 2001; Murimi, 2013; Pendergast, Garvis, & Kanasa, 2011; Thomas & Irwin, 2013), while others argue this notion and advance FL to consider the broader environmental, social, economic, cultural, and political forces (Belotti, 2010; Benn, 2014; Cullen, Hatch, Martin, Higgins, & Sheppard, 2015; Desjardins & Azevedo, 2013; Dyg, 2014; Kimura, 2010; Martin, 2018; Stinson, 2010; Sumner, 2013). By way of example, Vigden (2016) draws attention to the term FL as being “most often applied to the outcome of nutrition but is also applied to other food related outcomes, particularly environmental sustainability, informed consumerism, active citizenship, and food security” (p. 2). Given the broader scope concerning food related outcomes, Sumner (2013) recognized there is a need to reframe FL as a social practice and connected Habermas’ (1978) theoretical understanding of the three domains of knowledge to FL: empirical/analytic knowledge (reflects knowledge and skills adopted through individualistic approaches to food); historical/hermeneutic knowledge (understanding culture and meaning associated to food), and critical/emancipatory knowledge (critical reflection; exposing the hidden power within food system structures for social

transformation). Slater (2013) advanced this notion whilst “encompassing applied and theoretical aspects of functional, interactive and critical ‘food literacy’” (p. 623) as demonstrated in Table 3 to align with Nutbeam’s (2000) typology of health literacy. Widener & Karides (2014) have described an even broader food literacy concept - ‘system food literacy’. Researchers have also acknowledged that multiple literacies such as civic literacy, cultural literacy (Zarcadoolas, Pleasant, & Greer, 2005) and literacies related to agriculture, and environment (Yeatman, 2016) are well aligned with FL.

**Table 3. Functional, Interactive, and Critical Food Literacy (Slater, 2013)**

Functional food literacy	Communication of credible, evidence-based food and nutrition information, involving assessing, understanding and evaluating information.
Interactive food literacy	Development of personal skills regarding food and nutrition issues, involving decision making, goal setting and practices to enhance nutritional health and well-being.
Critical food literacy	Respecting different cultural, family, and spiritual beliefs in respect to food and nutrition (including nutritional health), understanding the wider context of food production and nutritional health, and advocating for personal, family and community changes to enhance nutritional health.

Furthermore, FL has been described “as a crucial determinant of health improvement, environmental sustainability, and social equity” (Palumbo, 2016, p. 104). This broader, more comprehensive FL definition acknowledges benefits to the individual as well as the positive impact on health and environmental outcomes (Howard & Brichta, 2013) leading to a “viable improvement of the various determinants of individual and social well-being” defined as ‘enhanced well-being sustainability’ (Palumbo, 2016, p. 104). For that reason, it is our responsibility to directly expose children and youth to the importance of gaining individual food and nutrition skills (i.e., knowledge, access,

values, beliefs, culture) as well as to provide supportive environments (i.e., food environment, food and nutrition programs, access, availability, and affordability) to “enable individuals to implement their food literacy” (Poelman et al., 2018, p. 10) towards ultimately supporting their own, and the planet’s, health and well-being.

It is clear there are multiple perspectives and worldviews that frame health literacy, nutrition literacy, and FL creating elements of confusion; however, there are some commonalities between health literacy, nutrition literacy and FL. It appears the definitions presented above related to nutrition literacy and FL align with Nutbeam’s (2000) functional, interactive, and critical literacy approach. Furthermore, functional literacy is foundational to both nutrition literacy and FL. Moreover, there have been many debates around health literacy being “dominated by the functional domain which focuses on the technical, practical and individual skill set” (Chin, 2011; as cited in Sykes, Wills, Rowlands, & Popple, 2013, p. 8). This rings true for FL as well; though more and more researchers are pointing to the need to broaden the scope of FL to include the broader public and ecological health perspective.

### **3.4 Limitations of Food Literacy Definitions**

Food literacy (FL) elicits a great deal of attention in academia, schools, government and non-government organizations. While some may view it as trendy, this concept has evolved over the past several years into a growing area of research and practice and has become quite a dilemma for researchers, practitioners and policy makers. On the one hand, FL has captured the interest of researchers, practitioners, and policy makers from various disciplinary backgrounds and fields of practice, and as such, there have been various perspectives, definitions and frameworks proposed in an effort to

explain the complexity of this construct as well as to advance interventions related to food concerns from both the individual and broader context. On the other hand, and consequently, there is confusion and competing viewpoints reflected in the various definitions and frameworks, as previously noted. Despite this, “programs that aim to improve food literacy must be evaluated in order to ensure effectiveness; however, systematic reviews of these types of programs generally demonstrate poor evaluation” (Begley, Paynter, & Dhaliwal, 2018, p. 1). Without a common understanding of FL, there are no shared identifiable variables and indicators for analysis, parameters for inquiry, or measurement tools (Pleasant et al., 2016); thereby limiting progress on “providing practical tools and tailored methodologies” (Palumbo, 2016, p. 105) for FL policy and program development, implementation and evaluation.

There needs to be a more central position within education, social discourse, and public conscience to achieve this goal; therefore, how FL is conceptualized and communicated is important for effecting social change. If not clearly understood and agreed upon, the approaches taken, skills required, and use of resources by various researchers, government departments, non-government organizations, and schools will continue to vary and compete against each other. However, with a new approach and understanding that FL has multiple interdisciplinary components, researchers, practitioners and policy makers may also create opportunities for harnessing their profound, yet disparate, perspectives. This may, in fact, allow them to be in a better position to explore the variety of factors and components within this construct to enhance their collective practices and outcomes. Specifically, this new approach to FL has the potential for impact by contributing to increasing the effectiveness of FL in the school

context through a tailored approach to the various components of this construct. The examination of FL practice and policy in schools is timely given the recent release of a new version of *Canada's Food Guide* and the call for a *National School Food Program*.

### **3.5 Multiple Dimensions of Food Literacy**

Recent research, including systematic and scoping reviews, have documented, analyzed, and in some cases categorized different definitions, themes, domains, attributes, and concepts of FL to interpret its representation, introduce a new or integrated definition of FL, develop a new FL framework, or create evaluation measures (Amin et al., 2018; Azevedo Perry et al., 2017; Begley, Paynter, & Dhaliwal, 2018; Cullen, Hatch, Martin, Higgins, & Sheppard, 2015; Krause et al., 2018; Palumbo et al., 2017; Poelman et al., 2018; Slater, Falkenberg, Rutherford, & Colatrgulio, 2018; Truman, Lane, & Elliott, 2017; Velardo, 2015; Yuen, Thomson, & Gardiner, 2018). This body of research and theory underpins my understanding of FL and has informed the development of my conceptual framework.

Through a comprehensive literature search and mapping exercise, I summarized the multiple dimensions of FL (Table 4). The multiple dimensions include both individual and public health perspectives through an interdisciplinary approach, drawing on health, nutrition, agriculture, sociology, environment, economics, political science and education scholars, to capture the following multiple literacies: health literacy, nutrition literacy, agri-food literacy, food media literacy, civics literacy, cultural literacy, and eco-literacy.

*Table 4. Multiple Dimensions of Food Literacy Conceptual Model*

<b>Author/Year</b>	<b>Type of Literacy</b>	<b>Definition</b>
Sorenson et al., 2012	Health Literacy	Linked to literacy and entails people's knowledge, motivation and competences to access, understand, appraise, and apply health information in order to make judgments and take decisions in everyday life concerning healthcare, disease prevention and health promotion to maintain or improve quality of life during the life course.
Zoellner, Connell, Bounds, Crook, & Yadrick, 2009	Nutrition Literacy	The degree to which individuals have the capacity to obtain, process, and understand nutrition information and skills needed in order to make appropriate nutrition decisions.
	Agri-Food Literacy	<i>*No formal definition as of yet; a combination of agricultural and agroecology literacy</i>
American Farm Bureau Foundation for Agriculture, n.d.	Agricultural Literacy	To understand the relationship between agriculture and the environment, food, fiber and energy, animals, lifestyle, the economy and technology.
Francis et al., 2003	Agroecology	To understand the entire food system, encompassing ecological, economic and social dimensions.
Peterson, 2012	Food Media Literacy	The ability to critically respond to food-oriented media that might empower people to pursue healthier choices in a commercially driven food landscape.
Zarcadoolas, Pleasant, & Greer, 2005	Civics Literacy	The abilities that enable citizens to become aware of public issues and to become involved in the decision-making process related to food.
Zarcadoolas, Pleasant, & Greer, 2005	Cultural Literacy	The ability to recognize and use collective beliefs, customs, worldview, and social identity in order to interpret and act on health (and food related) information.
Puk, 2009	Eco-literacy	The capacity, based on a comprehensive understanding of the interconnections between natural systems and human systems, to make informed decisions about the future of life in relation to food.

To my knowledge, there is no formal definition in the literature to describe Agri-Food Literacy, however I believe this term seems to capture the essence of agricultural literacy and agroecology. Agri-food literacy is a key element to FL as it represents the intersection between agriculture and food systems. I therefore offer this proposed definition of Agri-food literacy:

The ability of an individual to understand and respond to the interrelationship between agriculture and food systems, including ecological, economic, social, political and cultural components to contribute to personal and environmental health and well-being.

Moreover, civics literacy, cultural literacy, and eco-literacy are interrelated and highly overlap with the other literacies. Civics literacy, cultural literacy, and eco-literacy include making individual decisions while embracing the interests of the broader public and ecological health targets (Zarcadoolas, Pleasant, & Greer, 2005). In doing so, environmental, economic, cultural, social and political considerations are taken into consideration which demonstrates the FL critical literacy domain. Integrating these multiple literacies as components of a larger FL construct removes the false dichotomy of situating the individualistic notion of FL as contradictory to that of the broader societal context; rather, the individualistic notion of FL is a component within the larger construct of FL. It is important to note that my proposed *FL Conceptual Model* does not comprise a simple progression. For example, an individual may be literate in one component of the model and not in another and may or may not move seamlessly through the various components in a linear fashion, as it is dependent on cognitive development and exposure to different food related contexts.

Given the complexity regarding the interrelated and overlapping multiple literacies related to FL, it is important to recognize that it is the integration and action of each of the components and dimensions of the multiple literacies (Appendix A), as defined in the proposed *FL Conceptual Model*, that will create a food literate citizen.

Food citizenship has been discussed in the literature for over a decade and warrants further links to FL. Food citizenship has been defined as “the practice of engaging in food-related behaviours that support, rather than threaten, the development of a democratic, socially, and economically just, and environmentally sustainable food system” (Wilkins, 2005, p. 271). Interestingly, food citizenship has a key focus on the food system and not on individual health. There is a significant challenge to move individuals and broader society along the continuum of FL, from functional to interactive FL, to achieve critical FL with a goal of food citizenship. More specifically, this means that a food citizen has the interest and agency to make changes related to food choices and behaviours in the food environment, as opposed to a food consumer who seemingly is passive in the food environment. This notion of active food citizenship is essential to FL.

### **3.6 Food Literacy Conceptual Model**

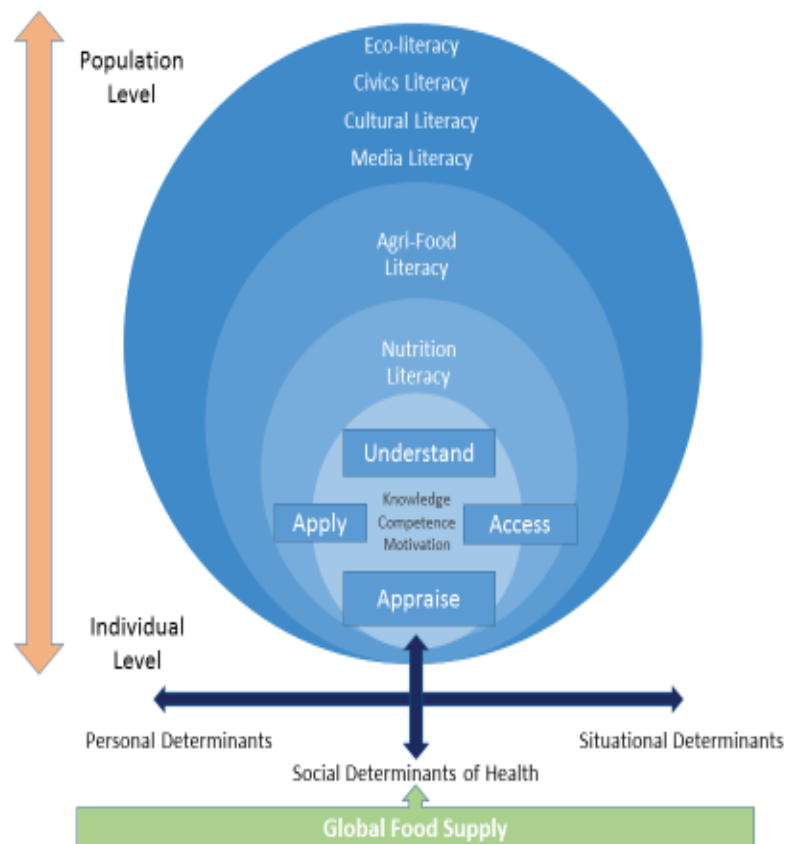
Given that food and health are synergistic, there is a need to bridge health literacy and FL. Both health literacy and FL are multidimensional, consist of diverse components and have no unanimously accepted definitions in the literature. Both literacies take into account an individualistic approach while acknowledging the system-level factors and forces that influence and/or impact an individual’s range of health literacy or FL. The intersection of health literacy and FL is essential to advance FL interventions, policy and



practice. Hence, there is a need to incorporate the various domains of literacy into a conceptual model in order to demonstrate the integrated and interdisciplinary nature of this construct and to inspire a shared understanding of FL.

For the purpose of this research, I propose a *Food Literacy Conceptual Model* (Figure 1) which includes an interpretive approach and a deeper understanding of FL through an interdisciplinary lens by building upon Cullen et al. (2015) *Food Literacy Framework for Action* conceding “individual behaviours and skills cannot be separated from their environmental or social context” (p. 144), and adapting (Sørensen et al., 2012) *Integrated Model of Health Literacy* while taking into consideration the various themes, attributes, domains, competencies and concepts of FL described in the literature (Amin et al., 2018; Azevedo Perry et al., 2017; Begley et al., 2018; Cullen et al., 2015; Krause et al., 2018; Palumbo et al., 2017; Poelman et al., 2018; Slater et al., 2018; Truman et al., 2017; Velardo, 2015; Yuen et al., 2018). As previously stated, the FL definition and framework of Cullen et al. (2015) provided the foundation to my conceptualization since this framework took into account the broader ecological public health perspective I was considering. Each of the domains, attributes, competencies and concepts of FL that were published after I developed my FL conceptual model were reviewed to confirm each corresponded to my FL Conceptual Model. Fundamentally, this FL Conceptual Model provides a starting point to evolve our thinking about FL and highlight the need for a shared understanding from the multiple and interdisciplinary perspectives and viewpoints in the literature. This approach sets it apart from existing conceptual models and frameworks examining key domains, attributes, and competencies specific to FL to an expanded model coalescing the various perspectives in the literature.

**Figure 1. Food Literacy Conceptual Model**



Reminiscent of health literacy, my proposed *FL Conceptual Model* integrates the characteristics of a conceptual model delineating the main dimensions of FL, and a logical model illustrating the proximal and distal factors that impact on health literacy, and ultimately FL (Sørensen et al., 2012). Furthermore, the core of the model illustrates the concepts that relate to individual influences such as

knowledge, skills, access, values, and beliefs which interact with community factors including policies, programs, availability, and culture. This leads to a comprehensive understanding of food systems and food within culture and society, all culminating in how food choices impact health and wellbeing (Cullen et al., 2015, p. 143).

Likewise, the center of the model captures the essence of Sørensen et al. (2012) competencies of understanding, accessing, appraising and applying health and food-related information:

- (1) Understand refers to self-awareness and the agency to comprehend and make meaning of food-related information that is accessed;
- (2) Access refers to the ability to seek, find and obtain relevant food-related information;
- (3) Appraise describes the ability to interpret, filter, judge and evaluate the food-related information that has been accessed for credibility of information as well as relevance to one's food-related needs and goals; and,
- (4) Apply refers to the ability to communicate and use food-related information to make a decision to maintain, improve, and promote health (in the broader context of self, community and environment) (Sørensen et al., 2012, p. 9). The above-named competencies also align with Nutbeam's (2000) and Slater's (2013) typology for health (food) literacy: functional, communicative/interactive and critical health/food literacy as well as Habermas' (1978) three domains of knowledge: empirical/analytic knowledge, historical/hermeneutic knowledge, and critical/emancipatory knowledge.

Moving away from the core of the model, each of the FL concepts embodies a fundamental dimension represented as nested circles, akin to Bronfenbrenner's ecological model of human development (1979), to demonstrate the complex and interrelated construct of FL. Each dimension of FL integrates the features of functional (basic knowledge), interactive (hands-on skills) and critical FL (critically analyzing and appraising information to engage in food related actions to overcome challenges related to personal, structural, social and economic barriers to accessing food for health and well-

being); though not visually depicted in the model (see Appendix A). Furthermore, my proposed *FL Conceptual Model* acknowledges that in order to foster the critical/emancipatory considerations of food, knowledge and skills in each of the knowledge domains should be realized; each of these knowledge domains may develop at different paces and through varying experiences, which aligns with Bronfenbrenner's thinking around human development.

Given the challenges related to accessing food for health and the “growing concerns about social inequities and health inequalities” (Gillis, 2016, p. 98), the need to identify other factors and forces influencing health, social equity, and FL is recognized. The foundation of the model identifies the more distal factors, including the global food supply leading up to “the societal and environmental determinants (i.e., demographics, culture, language, political forces, societal systems), proximal factors, which are more concerned with personal determinants (i.e. age, gender, race, socioeconomic status, education, occupation, employment, income, literacy) and the situational determinants (i.e. social support, family and peer influences, media use and physical environment)” (Sørensen et al., 2012, p. 10). Furthermore, as individuals engage with food on a daily basis, the context related to food is temporal which requires the knowledge, skills, and competencies to navigate the food system and environment to develop over time as the context changes and the demands for FL evolve. My proposed *FL Conceptual Model* integrates both the individual and public health perspective. This conceptual model will be used to provide a set of reference points to locate the research, provide a common language, and structure for framing my research. Further, this proposed conceptual model will be tested in Chapter Six, using empirical data gathered for this study. The purpose of

testing my *FL Conceptual Model* is to validate the accuracy of the empirical and theoretical relationships as well as to provide the groundwork for the remainder of the study. To do this, the multiple dimensions of FL and their respective definitions from my proposed *FL Conceptual Model* will be ‘mapped’ against the teacher and parent interviews using a deductive approach to my analysis.

### **3.7 Chapter Summary**

This chapter has provided a review of the literature as it relates to human development, literacy, as well as the relationship of health and nutrition literacy to FL. The various perspectives of FL were presented, in addition to the limitations of current FL definitions. Finally, I propose a *FL Conceptual Model* to frame my research and test against the empirical data.

## CHAPTER 4: RESEARCH METHODOLOGY

This chapter will introduce the philosophical underpinnings, research paradigm, methodology, and theoretical framework that will be used to explore my overarching research question:

*How is food literacy conceptualized and communicated in NS public schools?*

This research was approached using a critical research paradigm, tenets of critical ethnography, and a case study approach to inform my understanding of FL in the NS public school system. It is important to acknowledge that only tenets of critical ethnography were used in this study due to external factors (industrial action within the school system) influencing the research as this limited my ability to complete participant observations in the school community.

### 4.1 Philosophical Underpinnings

It is important to articulate philosophical assumptions in research projects; these assumptions consist of a basic set of beliefs that guide inquiries and construct a researcher's worldview (Creswell, 2013). Worldviews differ in the nature of reality (ontology); how we know reality (epistemology); the role values, beliefs, and culture play in research (axiology); the process of implementing the research (methodology); and, the language of research (rhetoric) (Creswell, 2013). This research study employed a Constructivist worldview. Creswell (2013) relates constructivism to the subjective meanings that are formed by and through individual experiences, culturally and historically (epistemology). Constructivists posit that individuals draw upon knowledge, understanding, and meaning from interactions within the world (Bisman & Highfield, 2012). Constructivists consider multiple realities and truths (ontology) while aiming to

understand the meaning of phenomena through participants and their subjective view by deconstructing the realities (axiology) (Creswell, 2013). Therefore, constructivists depend on feedback from participants to generate inductive interpretations.

A qualitative research approach often embraces a constructivist worldview “wherein the researcher seeks to establish the meaning of a phenomenon from the views of the participants to identify shared meaning, culture, and behaviour” (Fusch & Ness, 2017, p. 924); this approach aligns with ethnography. Likewise, critical ethnography is underpinned by a critical and/or social-constructivist paradigm that assumes the meaning of human actions and interactions is bound by complexity, intersectionality, and contradiction.

#### **4.2 Research Paradigm**

This research was explored using a critical paradigm. The critical paradigm, informed by critical theory, promotes the idea that the world and reality are socially constructed and influenced by the socio-cultural and political context (LeCompte, & Schensul, 1999b). This paradigm attempts to describe the underlying structures and processes that influence FL through gathering information about lived experiences and their origins (Brookfield, 2005). Brookfield (2005) suggests the need to challenge ideology by means of identifying and addressing the ways that certain ideas and beliefs may be ambiguous which often serves to endorse the interests of those with power; he further proposes that part of this challenge involves countering hegemony as the process by which “people learn to embrace as commonsense wisdom, certain beliefs, and political conditions that work against their interests and serve those of the powerful” (p. 43). Finlayson (2005) indicates the goal of critical theory is not just to determine what is

wrong with contemporary society now, but to identify progressive aspects and tendencies within it to help transform society for the better through progressive and transformational change. In fact, it is through analyzing the broader context that conditions which hinder or enhance humans to thrive can be revealed.

### **4.3 Critical Theory**

Socrates, an ancient Greek philosopher, set the agenda for critical thinking by examining reasoning and assumptions, and power relations. Though the term critical theory originated in the early 1900s to challenge dominant view across many disciplines, it has since evolved to “offer a multidisciplinary approach to society” as it “combines perspectives drawn from political economy, sociology, cultural theory, philosophy, anthropology, and history” (Bronner & Kellner, 1989, pp. 1–2). As such, critical inquiry explores cultural meanings and social relations while challenging the political, social, and economic influences.

Paulo Freire, one of the most influential scholars/practitioners related to the development and advancement of critical literacy, stimulated learning to encourage individuality, citizenship, social justice, and democratic participation in all aspects of life (Kellner, 2003). While applying Freire’s work on literacy, individuals may understand that learning to read the social context in which our food is produced, distributed, prepared, consumed, and disposed of is “really useful knowledge that can lead to a more equitable world” (Sumner, 2013, p. 89). In addition, Jurgen Habermas has generally been regarded as the most important contemporary representative of critical theory and set forth criteria in his theory of communicative action to evaluate claims in critical literacy by taking into account the social and structural contexts of action (1984, 1987). Both



Freire and Habermas theorize society, in which school systems belong, is linked to education, social domination, and cultural reproduction (Kellner, 2003) which ultimately creates power imbalances and inequities. This correlates to the earlier discussion (Chapter Two; Section 2.3.4) with regards to comprehensive school health and school culture affecting the uptake of programs, such as FL.

#### **4.4 Critical Ethnography**

Various definitions of ethnography exist throughout the literature. Creswell (2013) states that ethnography is a qualitative design meant to investigate, “describe, and interpret the shared and learned patterns of values, behaviours, beliefs, and language in a culture-sharing group” (p. 90). According to Morse (1987), ethnography is considered focused when investigating specific values, beliefs and practices of a particular phenomenon. “The aim of the ethnographer is to learn from (rather than to study) members of a cultural group - to understand their worldview as they define it” (Mischra, 2005, p. 31). Bolman & Deal (2013) indicate culture is “both a product and a process. As a product, it embodies wisdom accumulated from experience. As a process, it is renewed and re-created as newcomers learn the old ways and eventually become teachers themselves” (p. 263). To that end, culture provides rules and routines that enable order, regularity, familiarity, and predictability (Whitehead, 2002).

Ethnography has been applied in school settings since the late 1960s (Anderson, 1989). While ethnography was introduced into the educational system, other theorists took on a critical lens and made their way into educational discourse (Foucault, 1972; Freire, 1997; Habermas, 1975; Horkenheimer, 1972). This critical inquiry provoked important questions related to the role of schools in relation to the social and cultural

context (Anderson, 1989) assuming that empowered and disempowered individuals exist simultaneously in the school system. Furthermore, there is a need for a rich critical research method in the field of health promotion to explore the determinants of health (Cook, 2005). Cook (2005) highlights the congruence between critical ethnography and health promotion by stating “both health promotion and critical ethnography aim to give more power, and thus control, to those affected by social policies and ideologies” (p. 135). Critical ethnography is “central to what interdisciplinary work is supposed to deliver: a gaze that goes beyond the limitations of discipline, and that enables one to look at complex, multilayered problems in novel ways” (Monteiro, 2018, p. 155). Both health and education are interdisciplinary as they intersect many disciplines.

Critical ethnography is informed by critical theory; therefore, it is an applied form of ethnography in search of knowledge, grounded in political analysis to inform social change (Creswell, 2013) by uncovering invisible power and privilege processes and practices that bring about social injustice and inequities. Likewise, critical ethnography “is understood as a form of knowledge production which supports transformative as well as interpretive concerns” (Simon & Dippo, 1986). Considering a constructivist approach to multiple realities, this research will take the approach that “the truth of something can only be seen through the use of the totality of perspectives ones can bring to bear upon it” (Apple, 2004, p. 124) in order to expose the varying power relations and inequities. Therefore, a critical ethnography approach was employed to explore FL in the school environment as well as the role of language/discourse (looking for meaning) in constructing how and what has created the FL practices and processes. Due to its critical nature, its longstanding use in the field of education, and its interdisciplinary nature

(applied to health promotion), tenets of a critical ethnography approach are justified for this study.

#### **4.5 Critical Ethnographic Case Study**

Recognizing that ethnographic investigations may take years, an “ideal” ethnographic approach is not always a pragmatic option when working within the bounds of the school realities; for that reason, an ethnographic perspective, resembling a mini-ethnographic approach, was taken. With mini-ethnography, the research is bounded in time and space by means of a case study design (Fusch & Ness, 2017).

According to Willis (2007), a case study is comparable to ethnography. However, what sets a case study apart from ethnography is its boundedness and specificity (Stake, 2005). Yin (2014) asserts case studies are useful when *how* or *why* questions are being asked, when the researcher studies a contemporary phenomenon within some real-life context, and when the boundaries are not clearly obvious. Furthermore, Willis (2007) outlines three specific attributes for case study research:

1. It allows you to gather rich, detailed data in an authentic setting.
2. It is holistic and thus supports the idea that much of what we can know about human behaviour is best understood as lived experience in the social context.
3. Unlike experimental research, it can be done without predetermined hypothesis and goals (p. 240).

Case study selection must consider the research purpose, questions and theoretical context (Stake, 2005). Moreover, Stake (2005) uses three terms to describe case studies: intrinsic, instrumental, and the multiple or collective case study. This study can be characterized as an instrumental case study in that it is a case “examined mainly to

provide insight into an issue or to redraw a generalization” (Stake, 2000, p. 437). It is a “case” of reference practices in the NS public school system that incorporated study of dimensions of FL, the socio-cultural context of teachers and parents, and the interaction of the environment as ‘reference point’ for school FL. The intent was to gain insight and full, rich understanding of the influences informing how FL is conceptualized and communicated within NS school communities. Therefore, it is not strictly a case study of the NS public school system, nor any of its individual school communities; it is a case study of a particular social and informational practice related to how FL is conceptualized and communicated by its own particular Nova Scotian context. Due to the focus of the study and its congruent attributes to a case study method, a qualitative, critical ethnographic case study approach was justified as my methodology of choice. This approach provided the opportunity to make detailed inquiries for strong data collection, despite not being in the field for extended periods of time. In addition, this design enabled me to generate, as well as study, theory as it relates to FL conceptualization and communication in the real world.

#### **4.6 Theoretical Framework**

Within the context of ethnography, Whitehead (2002) applies the *Cultural Systems Paradigm* (CSP). The CSP involves multiple phenomena (cultural, social, ecological, and psychological) found in all human societies and is based on four underlying ethnographic principles:

- *the principle of universal human cultural categories* (individual and normative behavioural patterns, individual and shared ideational structures, significant social systems, and expressive culture)

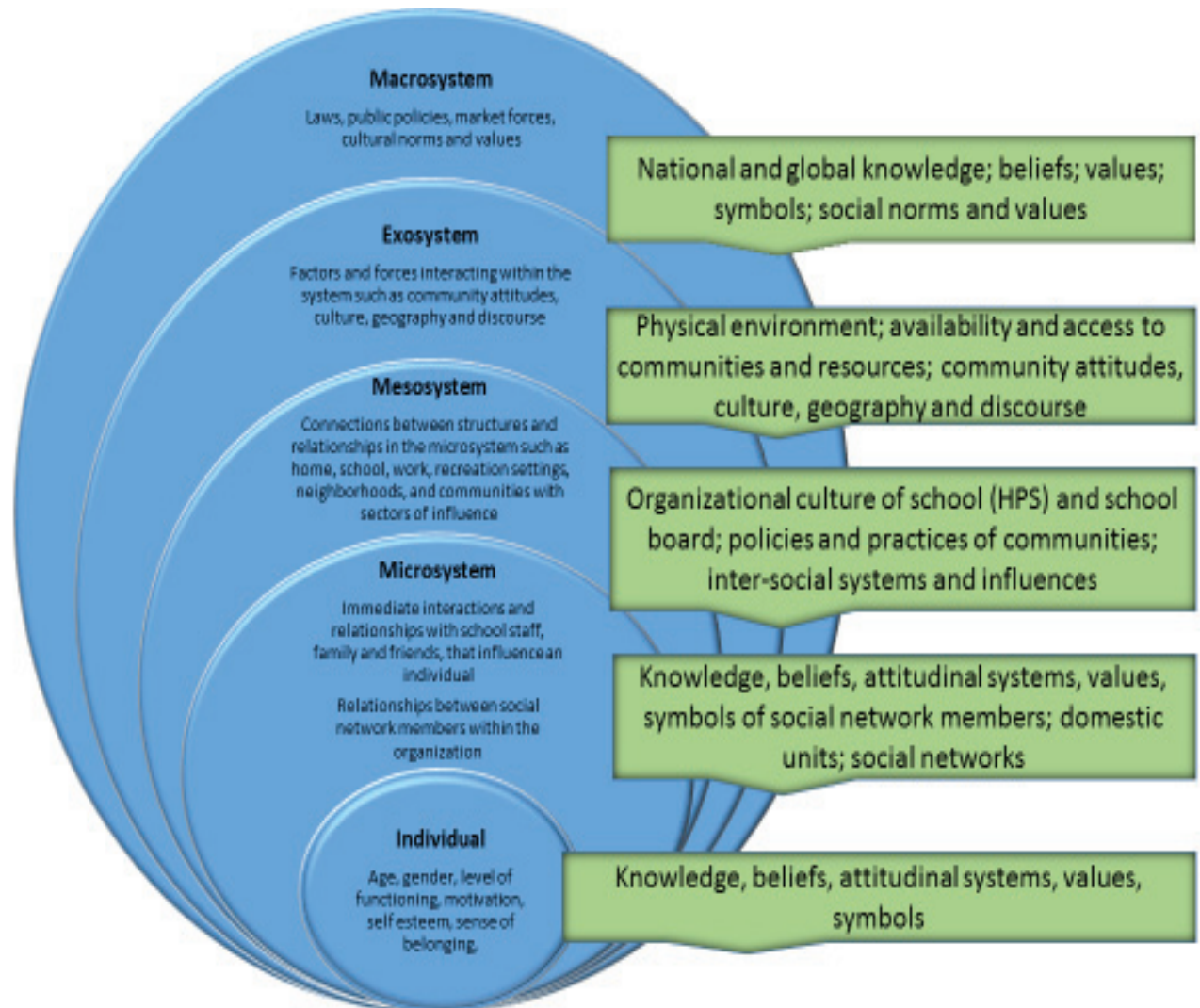
- *the principle of human ecosystems* (if cultural systems were going to be properly understood, they must be studied as components of their own human ecosystems)
- *the principle of paradigmatic flexibility* (flexible, and not rigid, because of the differences in behavioural and ideational expressions - both across human groups and individuals, as well as within the individual)
- *the principle of interrelationships* among socio-cultural contexts, processes, and meaning systems (to understand the socio-cultural processes of the relationship between individuals and their social systems and the relationship between individuals and their significant social systems) (Whitehead, 2002).

Erez & Gati (2004) assert culture is nested within an ecological framework and proposed a *Multi-level Model of Culture* characterized by the hierarchy of levels in the cultural system and the interrelationship among the various levels. The different structural and dynamic characteristics used to explain the interrelationship of culture within a nested structure include: individual culture, group culture, organizational culture, national culture, and global culture (Erez & Gati, 2004). This nested structure aligns well with Bronfenbrenner's Ecological Model which proposes human development is dependent upon complex and interactive processes that exist between an individual and their environment. Bronfenbrenner's Ecological Model is made up of the microsystem (immediate interactions and relationships with family and friends that influence an individual), mesosystem (connections between structures and relationships in the microsystem such as neighborhoods, communities, and schools), exosystem (factors and forces interacting within the system such as government or food industry), macrosystem (values, health, laws, public policies, culture and ideologies), and chronosystem

(environmental, contextual, and socio-historical changes over time) (Kail & Cavanaugh, 2010; Shaffer & Kipp, 2010).

A school is considered a social system in which many factors at various levels of the eco-system work to influence an individual's circumstances and behaviour, as well as the health of the environment around them (Reist, 2013). Paying attention to and analyzing each of these levels is essential for understanding the multi-layered dimensions of FL in school communities. By adapting Bronfenbrenner's Ecological Model, and borrowing terminology and concepts used from the CSP and Multi-level Model of Culture, I have developed a research framework (Figure 2) to organize the research design and implementation and frame my conclusions.

**Figure 2. A Cultural Socio-ecological Research Framework based on Bronfenbrenner's (1979) Socio-ecological model, Whitehead's (2002) Cultural Systems Paradigm, and Erez & Gati's (2004) Multi-level Model of Culture**



For the purpose of this study, this theoretical framework helped frame the study in relation to the socio-cultural context of FL and guide the data analysis in order answer the research questions presented. It also provided a framework for capturing my critical insight into the values, beliefs, practices and processes of the participants. Finally, this theoretical framework provided a structure to document the “shared meaning systems, preferred or normative behaviour and social structure, and shared expressive systems” (Whitehead, 2003, p. 6) that are established in the culture of the school community related to FL.

## **4.7 Chapter Summary**

Critical ethnography is both a theory and a method; “It is critical theory in action” (Madison, 2005). This approach examines how hegemony (power) is situated in social and cultural processes within distinct social settings via examining political, cultural, economic, and environmental processes. Thus, it considers the deeper aspects of culture, which may be hidden; disrupts the status quo; and challenges both neutrality and taken-for-granted assumptions by drawing attention to actions of power and control. As such, critical ethnography contributes to emancipatory knowledge and discourses of social justice. The next section outlines the specific research methods that were used in relation to critical ethnography.



## CHAPTER 5: RESEARCH DESIGN

This chapter details the research design and approach that I used to understand how FL is conceptualized and communicated by teachers and parents in NS school communities. As presented in Chapter Four, this qualitative study was conducted using a critical research paradigm, with tenets of Critical Ethnography. This chapter summarizes the research design employed, including the approaches used to facilitate participant recruitment and my approach to data analysis. This chapter concludes with a section on researcher reflexivity, which is essential for research that is conducted using a critical ethnographic approach.

### 5.1 Research approach

This study was situated within a broader multi-component and phased study entitled *Building on successes and learning from challenges: A comprehensive evaluation of the school food and nutrition policy (SFNP) in Nova Scotia* with the following research objectives:

*Research Objective 1:* Describe the system level dissemination of the SFNP; and

*Research Objective 2:* Assess factors influencing the adoption of the SFNP.

This study contributes to Research Objective 2 of the larger study through the following research question:

*How is food literacy conceptualized and communicated in NS public schools?*

To achieve this, I employed a qualitative inquiry using a case study approach while drawing on tenets of critical ethnography. In the proceeding sections of this chapter, I will summarize the study setting, study participants (recruitment and sample size), and the sources of data.

### 5.1.1 Setting

The setting for this study was in the province of Nova Scotia (NS), Canada. The province of NS provides a unique case to explore how FL is conceptualized and communicated for two reasons: 1) its rich (but challenging) history of economic growth and development derived from its agriculture, mining, and fishing sectors; and 2) its history of political commitment towards improving children's health through the provision of substantial and ongoing financial support for school food policies and programs since 2005 (McIsaac et al., 2019). Furthermore, as NS was one of the first Canadian provinces to position nutritionists in communities and public health units across the province, there is a long history of addressing nutrition issues through education efforts directed to food and health.

One of four provinces that form Atlantic Canada, NS is the second smallest of Canada's ten provinces and the most densely populated province in Atlantic Canada with a population of nearly one million residents. NS is surrounded by the ocean and is comprised of freshwater lakes which makes it an excellent habitat for fishers. Fishing in NS dates back many centuries and has been the livelihood for many families in their communities. Lobster is the most valuable seafood export for NS as more than half of the lobsters fished are exported (Province of NS, n.d.).

Agriculture is another important sector and began in NS over 400 years ago. Since that time, "farmers have been improving agricultural practices by testing crops and livestock to find the best suited to the climate, soils, and management practices of the province. Agricultural models that work well in western Canada or other places may not work well" (Province of NS, 2012, p. 3) for NS. The largest agricultural sector in NS "in

terms of number of farms is fruit farming, consisting mostly of blueberry and apple operations. Nova Scotia fruit farms represent a healthy 12% of the total number of fruit farms in Canada” (Province of NS, 2012, p. 9).

Despite the strong economic growth related to agriculture and fisheries, NS has some of the highest disease burdens across the country and is further afflicted with one of the highest rates of food insecurity in Canada (as previously described in Chapter Two). Given the complexity of the above stated factors, the province of NS is an excellent reference for a case study to explore how FL is conceptualized and communicated.

### **5.1.2 Participants**

Participants who are familiar with the area of inquiry and who are willing to impart information are preferred in ethnographical studies (Hammersley & Atkinson, 1983). For the purpose of this research, I employed criterion sampling, purposive and/or opportunistic sampling. Criterion sampling involves establishing criteria for studying select individuals (Creswell, 2013). This strategy is typically applied when considering quality assurance issues (Creswell, 2013). Purposive sampling aims to select participants based on their particular relationship to the area of inquiry (Creswell, 2013). This strategy allowed for the exploration of FL in the daily experiences of school communities and how their experiences are connected to and shaped by the broader environment. Opportunistic sampling is flexible and takes advantage of the unexpected, such as new leads during fieldwork (Creswell, 2013). This strategy allowed the sample to evolve on its own, which is a characteristic of carrying out an ethnographical study (Teddlie & Yu, 2007). This approach therefore allowed me to remain open to inviting a group or individual I hadn’t considered to participate if they met the inclusion criteria.

### *Inclusion Criteria*

Teachers and parents of students in NS public schools were invited to participate in this study in order to gather different perspectives on how FL programs, practices and initiatives are integrated into the school community based on the following criteria:

- someone who has undergone, or who is undergoing, the experience of school food and nutrition policy, programs, and initiatives inside and outside schools;
- someone who is able to reflect and provide detailed experiential information about the phenomenon in relation to the school food environment;
- someone who is willing to critically examine and self-reflect on the experience (in relation to SFNP, programs and initiatives) and his/her response to the situation (school food environment); and,
- someone who is able to participate in a lengthy (30-60 minute) interview process that will take considerable uninterrupted time (Morse, 1991).

For the purpose of the school communities, the following criteria were applied:

- Diversity of the nature of the school community (based on level of school (elementary, junior and high school), and the circumstances surrounding school community such as divergent political, social and economic context, and
- Geographical dispersion of school communities (catchment was determined by teachers and parents who expressed interest in participating in the study).

It is important to remind the reader that due to the industrial action within the school system, I was not able to seek out other characteristics such as gender balance, geographical balance, and teacher discipline balance.

### **5.1.3 Participant Recruitment**

Ethnographic studies typically start with key informants who may act as gatekeepers, thus enabling the researcher to initiate contact with potential participants (Creswell, 2013; Higginbottom, Pillay, & Boadu, 2013). Prior to recruiting participants, I worked as the Coordinator of School Food and Nutrition with the NS Department of Health and Wellness and had established networks with the school boards. I had intended to purposefully select the gatekeepers from my established networks to get into the school communities; however, due to the industrial action within the school system, I was not able to attend to this approach. Instead, participant recruitment occurred through an iterative process by way of social media recruitment; this was adjusted based on feedback from my supervisor and committee members, personal reflection as well as information I received from participants themselves. Once I received ethics approval for this study in April 2017, participant recruitment commenced. My primary recruitment tool for this study was a recruitment poster (Appendix B), which was shared via social media (Facebook and Twitter). This approach to recruitment was critical to the success of participant enrolment since I gained most of the interest, and subsequent enrolment, in my research study through this method. The secondary approach to participant recruitment was word of mouth and direct email to colleagues asking them to share the poster with their networks.

### **5.1.4 Sample Size**

Qualitative sample sizes should acquire sufficient data to address the research question and describe the phenomenon of interest. Sample size often depends on the research questions, data collected, data analysis, and the availability of resources; human

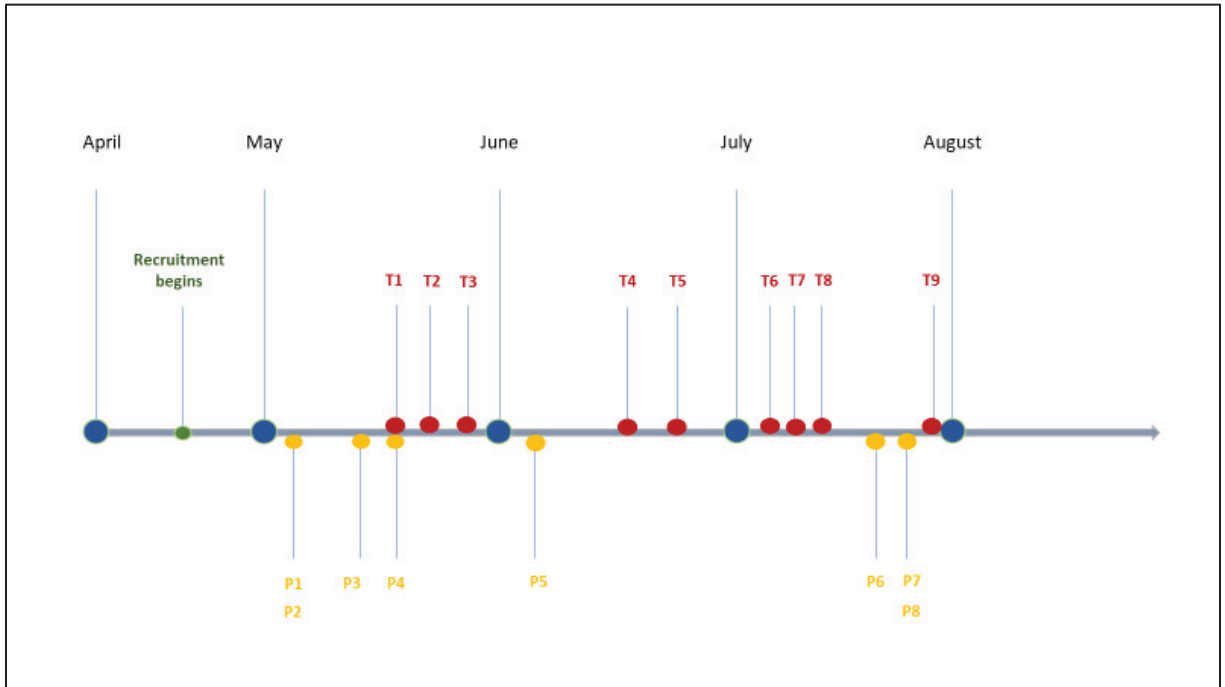
and financial (Merriam, 2009). For the purpose of an ethnographic education study, sample size ranges from 6-33 participants and for the purpose of health science research, a sample size ranges from 2-420 participants (Guetterman, 2015). Another approach to determining sample size is to investigate until no additional data or further themes are found; known as data saturation (Glaser & Strauss, 1967). Some studies have reported data saturation after as few as 6 interviews (Fugard & Potts, 2015). Furthermore, sample size for thematic analysis (discussed later) ranges between 2-400 participants (Guetterman, 2015); determined by the type of data collection and the size of the project. For small projects, 6–10 participants are recommended for interviews, 2–4 for focus groups, 10–50 for participant-generated text, and 10–100 for secondary sources while 400+ participants are recommended for large projects (Braun & Clarke, 2013). Furthermore, a recent methodological study found that *code saturation* (the stage at which no additional thematic issues are identified and codebook stabilizes) was realized at 9 interviews; but 16-24 interviews were required to reach *meaning saturation* (the point in time where one has a comprehensive understanding of the issues raised in the data) (Hennink, Kaiser, & Marconi, 2017). Taking this into consideration, it seems there are no agreed upon guidelines to determine sample size for qualitative inquiry. For that reason, I originally proposed to recruit between 20-30 participants in this study in order to obtain an information rich case study aligning with my research aim to explore the meaning of FL and attain depth in my findings related to socio-cultural context. More specifically, a variety of reasons were explored for proposing this range. First, I understood that an ethnographic education study sample size ranged from 6-33 participants; second, I recognized that recruiting potential participants to observe may be

challenging; third, the interview required an investment of uninterrupted time from busy teacher and parent participants; and finally, I anticipated generating a large amount of data for my analyses due to my two-pronged research approach (testing my conceptual model and exploring socio-cultural context of FL in schools). Given these factors, my rationale for the participant sample size was to ensure data quality, while achieving breadth and depth of the data, in order to provide a rich understanding of FL issues.

I encountered some challenges in recruiting and enrolling participants throughout my data collection process. The recruitment and enrolment of participants during the labour dispute and over the summer months posed scheduling challenges; many interviews had to be rescheduled several times. Once the recruitment poster was shared with potential participants and they identified their interest to participate by leaving a voice message or emailing me directly about the study, I followed-up to inquire further about their interest in participating and provided them with additional details about the study. Figure 3 provides a timeline that represents the recruitment process. Over the course of four months (April to August), I was contacted by a total of 21 individuals throughout my data collection process; three individuals did not respond after I provided them with additional information and followed up one additional time while one individual declined due to time constraints. A total of 17 participants (9 teachers and 8 parents) met the inclusion criteria and were eligible to participate. These participants were considered enrolled in the study once they provided written or verbal informed consent to participate in the interview (Appendix C). If written consent was not obtained prior to the interview, informed consent was completed at the beginning of our interview. Due to challenges with securing any additional interviews, it was decided by my

supervisor and members of my committee that data recruitment could cease mid-July 2017.

**Figure 3. Timeline of Recruitment Process**



## 5.2 Data Collection

According to Creswell (2013), data are typically gathered “in the research site, respecting the daily lives of the individuals at the site, and collecting a wide variety of materials” (p. 95). Common data collection methods used in ethnography often consist of observation, interviews, and documents. Data were collected in the context of the school community. Data collection was an iterative process and a maximum of four months was allotted for data collection. Data from multiple sources (as outlined in Table 5) needed to be organized, sorted, and retrieved for analysis purposes; for this reason, data were transcribed into Excel to assist with this process.



*Table 5. Data Sources*

Primary data source	
<b>Interviews</b>	Semi-structured interviews with nine teachers and eight parents of children in the NS public school system to understand how FL is conceptualized and communicated.
Secondary data sources	
<b>Document review</b>	I used the following items to contextualize the interviews and test my FL Conceptual Model: <ul style="list-style-type: none"> <li>• 4 NS public policy documents</li> <li>• 3 NS curriculum supporting documents</li> </ul>
<b>Field notes</b>	I used field notes to support my understanding of how FL was emerging from participants as well as to document my self-reflections.

### 5.2.1 Data Sources

The primary source of data collected for this study was semi-structured interviews with research participants. My secondary data sources included review of policy, guidelines, standards and supporting documents as well as my field notes. The research strategies used to address my research aims are outlined in Table 6.

*Table 6. Research Strategies Pertaining to Research Aims*

Strategy		Literature search	Teacher interview	Parent interview	Document review
<b>Dimensions of FL (Chapter Six)</b>	Meaning of FL	X	X	X	
	Components of FL	X	X	X	X
<b>Socio-cultural context of FL in NS (Chapter Seven)</b>	Knowledge, skills, values, behaviours, attitudes, language and norms related to FL		X	X	
	FL events and practices		X	X	X
	Barriers and enablers of FL		X	X	X

The following sections outline these sources and their applicability to the research objectives.

***Primary Data Source: In-depth semi-structured interviews***

Ethnographic interviews are often semi-structured (Hasselkus, 1990; Schensul, Schensul, & LeCompte, 1999; Spradley, 1979). In-depth semi-structured interviews are complex and require consideration of multiple dimensions of culture, boundaries, ethics and format (Fontana & Frey, 2005). According to Patton (2002), “researchers interview people to find out from them those things we cannot directly observe...feelings, thoughts and intentions. The purpose of interviewing, then, is to allow us to enter into the other person’s perspective” (pp. 340–341). Participants completed an informed consent (Appendix C) to participate in the interviews with an understanding that their contribution would be shared but their personal information would be kept confidential.

Participant interviews were conducted over a period of four months between April 2017 and August 2017. In order to conduct the interviews, I held the position that the most important aspect of the interviews with participants was that they were comfortable to express their experiences and perceptions; therefore, interviews were conducted in a quiet, comfortable, non-judgemental neutral location (Creswell, 2013) either in person or by telephone to accommodate participant requests.

A semi-structured interview guide (Appendix D) with broad questions was used to facilitate the conversation. Consistent with an ethnographic approach to interviewing, Spradley (1979) identified three major types of ethnographic questions to consider when conducting interviews: *descriptive*, *contrast*, and *structural*. The first set of questions I asked participants were *descriptive* in nature; this allowed me to better understand their

role in the school food environment. The second set of questions were *contrast* questions which afforded me the opportunity to better understand the barriers and facilitators to a healthy food environment. The last set of questions were *structure* questions, which enabled me to discover information about the various actors, organizations, and factors that influence school food environments. Furthermore, an active interview approach (Holstein & Gubrium, 1995) was employed for this research, focusing on conversational dialogue and interaction between the teacher and parent participants and myself; this allowed for flexibility throughout the course of the interviews which also aligns with an ethnographic approach.

At the start of the interviews, I explained that I was studying for a Doctorate in Interdisciplinary Studies degree through Dalhousie University, and that I was carrying out an exploratory investigation into FL which was part of a larger research project investigating school food environments. I explained that I was interested in listening to their experiences and perspectives and that there were no right or wrong answers to the questions. The goal of the interviews was to help build an understanding of how FL is conceptualized and communicated in order to inform policies, programs, practices and initiatives as well as how FL is influenced by socio-cultural forces and factors. Interviews ranged from 45-71 minutes, with an average of 50 minutes. All interviews were audiotaped and transcribed verbatim using labels taken from the words of participants.

### ***Secondary Data Source: Document Review***

Analyzing documents is a form of gathering qualitative data; the documents can be in the form of written, printed and recorded materials (Creswell, 2013). According to Smith (2001), exploring texts (documents) expands the scope of ethnographical research

beyond observations and allows the researcher to gain a better understanding of the intersection of text and how they “mediate, regulate and authorize people’s activities” (p. 160). Documents can provide a variety of functions such as: 1) documents can offer insights into the context - “a case of text providing context” (Bowen, 2009, p. 29); 2) documents convey background information and historical intelligence; 3) information contained in documents might evoke some questions that need to be asked; 4) documents serve as complementary (or contradictory) research data and can advance the knowledge base; and 5) documents can support or dispute findings and corroborate or contradict evidence from other sources. The raw material for document reviews may be any form of communication, usually written materials, such as, but not limited to, letters and memoranda, program proposals, organizational or institutional reports; survey data; teaching materials; and various public records (Bowen, 2009; Whitehead, 2005).

The purpose of the document review was to determine if there are provincial public policies, guidelines, standards and supporting documents that support or refute FL in schools and in what ways. It is important to note that no school or classroom material were collected.

### ***Public Policy Documents***

Since semi-structured interviews were my primary data-gathering source, I cross-referenced my FL conceptual framework to the content with key policy documents to examine the construct (food literacy) under investigation by way of identifying where discussions of the multiple dimensions of FL exist, how explicitly they appear, and if there are commonalities or differences across documents with my proposed *FL Conceptual Model*. It is important to note that the Framework Method (Gale et al.,

2013), which is situated under the broad family of thematic analysis (described in Section 5.4.1), was used to ‘map’ key documents to my proposed *FL Conceptual Model*. The following documents were considered for charting against my *FL Conceptual Model*, as they were referenced in participant interviews:

- *Health Promoting Schools Guiding Document (2015)*: describes guiding principles, pillars and substantive areas of focus that support healthy school communities where student learning, health, well-being and overall achievement are improved.
- *Food and Nutrition Policy for Nova Scotia Public Schools (2006)*: describes standards for foods and beverages served and sold in schools by way of directives and guidelines.
- *Provincial Breakfast Program Standards (2005)*: supports, and is supported by, Food and Nutrition Policy for Nova Scotia Public Schools (2006) and the Nova Scotia Health Promoting Schools program.
- *Nova Scotia Learning Outcomes Framework (2014, 2015)*: consists of a series of curriculum outcome statements describing what knowledge, skills and attitudes are expected by grade level and subject area.

### ***Supporting Curriculum Documents***

I conducted an online search for supporting provincial educational resources developed by the Department of Agriculture, Department of Environment, and Department of Fisheries and Aquaculture determine if the broader context of FL was recognized through government departments outside health and education, and the following documents were also obtained and analyzed:

- *Nova Scotia School Garden Resource Guide (2014)*: describes the actions required to initiate a school garden and provides the curriculum connections to gardening for Nova Scotia schools.
- *Taking on Climate Change: A Teaching Companion for Educators in Nova Scotia (2013)*: provides educational database of teaching resources as well as lesson plans, teaching units, and other classroom activities to support the inclusion of climate change education in Nova Scotia schools.
- *Nova Scotia Learn to Fish Student Guide (2006)*: provides an introduction to the basics of sportfishing, along with ethics and environmental stewardship. It is a supporting educational document for the Learn to Fish program which consists of two main components: classroom presentations and outdoor lessons.

Each of these documents were analyzed as part of this research since they are relevant in addressing my research question regarding how FL is conceptualized and communicated. This analysis was completed using pen, paper and highlighters. Furthermore, the document review identified that there is an awareness and understanding of FL in schools and also highlighted the successes, gaps and opportunities related to FL in the policies, guidelines and standards, and supporting documents.

With regards to my proposed *FL Conceptual Model*, the analysis of the documents offer a means of triangulating the data (discussed in Section 5.3) in addition to demonstrating the potential of my proposed *FL Conceptual Model* as a tool to promote FL belonging to diverse disciplines. In reference to the socio-cultural context, the analysis of documents provide a means of triangulating the data as well as demonstrating cultural rules which exist independent of people and are known as ‘ruling relations’,

socially-organized exercises of power that form people's actions and their lives (Campbell & Gregor, 2002). These documents supported my understanding of the relationship between personal experiences and perspectives in association with the facets of 'ruling' relative to food and nutrition within the school community (and the broader societal influences) and how they represent the meaning or understanding of FL. I conducted the document review process after the analysis of all interviews. The merits of doing this was that I followed the process for thematic analysis (described in Section 5.4.1) in order to chart the data appropriately.

***Field notes/Journaling.*** Emerson, Fretz, & Shaw (2011) state that for ethnography to be "sound and true", interactions and observations must be thoroughly and continuously documented. For the purpose of this study, I compiled generic field notes about my personal reflections as well as individual field notes for each participant. At the end of each interview, I wrote an entry in my field notes responding to the following questions:

- What themes emerged from the interview?
- What important points did I learn from the interview?
- Was there anything new, surprising or unexpected?
- Were there any particularly helpful quotes?
- Does anything need to be changed before the next interview?

(Emerson et al., 2011)

This is suggested to increase self-reflection, develop rich insights, and enhance intelligence gained from interactions and observations (Van Manen, 1997). I completed each field note with the intention of providing another aspect in the 'audit trail' to support my findings.

It is important to acknowledge that one of the important data collection methods in ethnographic research is the ability of the researcher to become embedded in the culture that is being studied; this is often done through observation. However, “being embedded is not necessarily linked to the amount of time spent at the research site” (Fusch & Ness, 2017). For that reason, non-participant observations, characterized as a method where the researcher follows the flow of events (Adler and Adler, 1994; as cited in Reeves, Peller, Goldman, & Kitto, 2013) can be beneficial in acquiring knowledge of values, policies, roles, structures, processes, practices, and tools used in the field.

When I began this research study, I was embedded in the school food culture by means of my employment; I was employed by the NS Department of Health and Wellness as the Coordinator of School Food and Nutrition. My position had a focus on food and nutrition policy and programs while also supporting health promoting schools and school health curriculum. This work-related experience afforded me the opportunity to cultivate a critical and complex systems lens. With this, I am cognizant of the context and culture within the school food environment and how this environment impacts students, their families, and their communities. I am also aware that cultural behaviours and language vary throughout the education system from school to school and between health and education which can strengthen or weaken the opportunities provided in the school community. I was no longer working in this role while I was conducting data collection and due to industrial action within the school system, I was unable to conduct participant observations in schools. Nevertheless, my work-related experience allowed for an embedded perspective and non-participant observations. Furthermore, I was also embedded in the culture since I am a parent of three children who were in the NS public



school system at the time of my investigation. As such, I was exposed to other parent views of school food as well as teacher and principal approaches to FL. I also sat on the School Advisory Committee (SAC) at my children's elementary school for two years which allowed me to observe how the school operates and its priorities. This is considered the 'emic' perspective in ethnography; which is perspective taken by a researcher who is a member of the community being studied.

### **5.3 Triangulation**

Ethnographic studies often apply triangulation (Reeves, Kuper, & Hodges, 2008). Triangulation is often used to strengthen the research approach by "assessing the validity and reliability of data-gathering methods in the social and behavioural sciences" (Pelto, 2017, p. 242) while providing a more detailed and balanced representation of the phenomenon (Altrichter, Feldman, Posch, & Somekh, 2008). The purpose of triangulation is not necessarily to verify the data but rather to disable the "intrinsic bias that comes from single-method, single-observer, single-theory studies" (Denzin, 1978, p. 307) by identifying different dimensions of the phenomenon under investigation. Considering there is debate in using triangulation to test for validity, it is important to note there is a common understanding that triangulation may strengthen the research data and provide deeper insight into the research problem to allow for new findings that may remain hidden if only using a single method or data source (Denzin, 1978). For the purpose of this research study, data triangulation has relevance in that it refers to multiple data sources being gathered to provide a more detailed and balanced approach to the phenomenon of FL.

## **5.4 Data Analysis**

During the process of data analysis, the researcher is the “instrument” for making judgements about coding, theming, decontextualizing, and recontextualizing data (Starks & Trinidad, 2007). The process for analyzing ethnographic data is both recursive and iterative (LeCompte & Schensul, 1999). For this reason, thematic analysis was used to ensure a comprehensive approach to analyze the data throughout the study (Vaismoradi, Turunen, & Bondas, 2013). In this section, I describe the procedure for analyzing my data sources.

### **5.4.1 Thematic Analysis**

Thematic analysis is commonly used in ethnographic studies to identify and describe themes and relationships that emerge from the data reflecting patterns of living and/or behaviours (Braun & Clarke, 2006). Thematic analysis involves the search for and identification of commonalities and competing viewpoints across interviews; it is a valuable approach to examine diverse participant perspectives while drawing on comparisons and contrasts in association with finding emerging and unexpected insights (Braun & Clarke, 2006). Thematic analysis is also flexible and practical and has the potential to provide a rich and comprehensive account of the data (Braun & Clarke, 2006).

For the purpose of this study, I identified patterns of themes emerging in the data, rather than analyzing responses to the specific interview questions (since my study was part of a larger study exploring NS food environments), in order to illustrate a range of participant experiences and perspectives related to FL. In order to complete thematic analysis, I applied Braun & Clarke’s (2006) six-phase framework (Table 7) as

subsequently described. Although it is presented in a linear fashion, it was an iterative process that required a lot of reflection and engagement with the data while going back and forth between phases, as described below.

***Table 7. Braun & Clarke's (2006) Framework for Conducting Thematic Analysis***

Phase 1: Become familiar with the data	Phase 4: Review themes
Phase 2: Generate initial codes	Phase 5: Define themes
Phase 3: Search for the themes	Phase 6: Produce the report

*Step 1. Become familiar with the data*

The first phase to completing my analysis was to become immersed in my data. Interviews were transcribed verbatim. Next, I read and re-read the transcripts and documents several times. At this stage, I also made notes, by hand, about my early impressions and emerging insights. The interview transcripts had large margins; one margin was used to record my analytical notes, thoughts and impressions.

*Step 2. Generate initial codes*

During the initial stages of coding, I stayed as close as possible to the interview dialogues. I applied the interpretive process of coding, more specifically open, axial, and selective coding to analyze the interviews (Corbin & Strauss, 1990). By coding the data in this manner, codes were placed into categories that are represented within my proposed conceptual and theoretical models to aid in mapping how FL is conceptualized and communicated. At this stage, these were not two separate overarching categories. Furthermore, an integrated/hybrid approach to qualitative thematic data analysis (Fereday & Muir-Cochrane, 2016) was employed which includes generating inductive codes, as well as applying a deductive organizing framework coded from the multiple theoretical

perspectives, that underpinned my proposed *FL Conceptual Model* and ultimately, guided this research. Deductive coding is aimed at testing theory while inductive coding is more concerned with generating new theory or ideas. For each transcript and document, I coded each segment of text that seemed relevant to the research question. Codes helped to organize and reorganize the data and provided multiple views of the data. Comparisons with previously coded material were made within the same category. Code words transformed and evolved as data analysis progressed. I did this by hand, working through hardcopies of transcripts and documents, using different color pens and highlighters.

*Step 3. Search for themes*

During the third phase of data analysis, I examined the codes to see which clearly fit together into a theme. Through the process of linking codes, themes and patterns were discovered across the entire data set. When I concluded this phase, I had organized the codes into broader themes.

*Step 4. Review themes*

While completing this fourth phase of the data analysis process, I reviewed, modified, revised, and changed themes several times. I reviewed the data to determine if the themes overlapped or if there were sub-themes. I grouped the themes to ensure they worked in the context of the overall data and to ensure they were more practical. This was an extensive period of the data analysis process.

*Step 5. Define themes*

This phase of the data analysis involved refining my themes in order to capture the essence of each theme. It was at this point that I recognized the need to create a

theme name that was captivating while still presenting the opportunity to recognize what the theme was about. This was a thought-provoking exercise.

*Step 6. Produce the report*

The final phase of analysis became apparent when the themes were fully formed. In the findings section of my dissertation, I use direct quotes from participants that support these themes. It was during the process of writing and integrating my findings that I was able to convey the larger societal ideologies to the context of FL.

Another form of data analysis that I used was the Framework Method which fits under the umbrella of thematic analysis. The Framework Method's "defining feature is the matrix output: rows, columns, and cells of summarized data, providing structure into which the researcher can systematically reduce data" (Gale et al., 2013, p. 2). The procedure for analysis has seven stages: 1) transcription, 2) familiarization with the data, 3) coding, 4) developing an analytical framework, 5) applying the analytical framework, 6) charting the data into the framework matrix, and 7) interpreting the data (Gale et al., 2013). Due to the nature of the document review, I did not need to transcribe key documents but did need to familiarize myself with the documents to code. I employed a deductive coding approach to analysis given that my proposed *FL Conceptual Model* was the framework applied in order to summarize the data. Reducing the data by charting into the multiple domains of FL allowed me to generate the typologies for each document. This method of analysis took longer than anticipated as I completed it on teacher and parent participant interviews (after conducting thematic analysis) and key documents, however, it allowed me to make comparisons within and between teacher and parent interviews and key documents.

Moreover, a thematic analysis approach to analysis is inclusive of critical ethnography and allows the researcher to interpret data into patterns and themes as well as to assess structural (program and policy) relevance while highlighting the concept of culture and language. Both Freire and Habermas theorize that society, in which school systems belong, is linked to education, social domination, and cultural reproduction (Kellner, 2003) which ultimately creates power imbalances and inequities. This critical lens was used to guide interpretation and analysis and is represented within my proposed theoretical framework by examining which factors are facilitators or barriers, taking into consideration the relationships amongst factors, while uncovering which factors appear to be common and distinct across the participant groups with respect to how the individual factors and broader societal forces intersect to influence FL policies, practices and programs. In keeping with the tenets of critical ethnography, I coded the teacher participant interviews first in order to analyze the experiences and perspectives of teachers in relation to FL, and then subsequently coded parent interviews in order to examine their experiences related to FL.

### **5.5 Ethical Considerations**

Ethical approval for this study was obtained from the Research Ethics Board at Dalhousie University (Appendix E). In accordance with the broader CIHR and Max Bell Foundation funded research project, this research study also sought permission from the Department of Education and Early Childhood Development.

Given that ethnographic studies require an extended period of engagement between researcher and the research site and the intensity of the relationship with the research setting, there are particular ethical concerns at all stages of the research process

– “getting in”, “getting on” and “getting out” (Buchanan, Boddy, & McCalman, 1988). To address these concerns, informed consent, anonymity, confidentiality, and privacy; and the sensitive nature of the topic are outlined below.

Prior to involvement in this study, recruited participants were provided with an Information and Informed Consent Package (Appendix C) which included all study information and the required informed consent paperwork. This information package outlined the purpose of the study, proposed research methods, participant inclusion criteria, voluntary participation, duration of study, risks and benefits of participation, reimbursement, confidentiality, results sharing, and the right to ask questions and/or withdraw from the study.

All qualitative studies present a challenge in that anonymity is not guaranteed. By virtue of association in conducting the interviews, I was personally aware of the participants’ experiences, as well as personal information about them (e.g., places of employment, family members, school community, etc.). Participants were advised that their study participation as well as their personal information would be kept confidential, that pseudonyms would be assigned to each participant and only this information would be used in data analyses.

In order to protect and maintain confidentiality, all identifying information was removed and kept separate from the original data or other identifying materials, all computer files relevant to this research were password protected. All original data files including transcripts and audio-recordings were securely stored and maintained in accordance to Dalhousie University institutional policies and only accessible by the

members of the research team. To ensure privacy, individual interviews were conducted in a private space, in a neutral location or by telephone.

I did not anticipate that any participant involved in this research study would be exposed to physical harm but recognized there is potential for mental or social harm. Food and health questions inevitably raise the issue of power; therefore, discussions related to food and health may have been a sensitive topic for some participants. Participants might have experienced emotional distress when sharing and reflecting upon their experiences with FL. For that reason, a list of community support services was available to participants if requested (Creswell, 2013). Fortunately, this was not required over the course of the data collection process.

## **5.6 Informed Consent**

The process of attaining informed consent for this study was in accordance with the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (Interagency Advisory Panel on Research Ethics, 2016). Ethical approval for this study was obtained from the Research Ethics Board at Dalhousie University (Appendix E) with original approval given in 2015 (REB: 2015-3644) and final study amendments approved in April 2017.

Individuals who expressed interest in the study by means of email or phone message were contacted and provided additional information on the study purpose, methods, participant expectations, voluntary nature of the study, benefits, risks and assurances of anonymity and confidentiality. I also described the process of determining participant eligibility. Participants were given the opportunity to have their questions answered or to seek clarification about any aspect of the study. Participants were



assured that they could decline participation or withdraw from the study at any point in time, without any impact to themselves, their jobs, or their school community.

Participants were additionally assured that none of the school staff would have any knowledge of their participation in this study. After they expressed interest to continue with the study by email or over the phone, they were deemed eligible to participate and we agreed upon a convenient time and location to complete the consent form (Appendix C) and conduct the interview (Appendix D). At the time of the interview, I reviewed the consent form with each participant (Appendix C) and obtained written or verbal consent to continue with the study. Each participant was provided with a copy of the consent form.

### **5.7 Trustworthiness**

The integrity of qualitative data is dependent on the ability to build rapport between the researcher and participants; with good rapport, participants are willing to share (Lawlor & Mattingly, 2001). Trustworthiness is the term used to describe the legitimacy and reliability of a study and is established as the indicator of rigour (which is the insignia of integrity) in qualitative studies (Lincoln & Guba, 1985). Rigour is the ability to remark on alternate or competing descriptions, and account for irregularities in the data (M. Morse & Field, 1995). Lincoln and Guba (1985) outline the four facets of trustworthiness: *credibility*, *transferability*, *dependability*, and *confirmability*. These criteria parallel validity and reliability in quantitative studies.

*Credibility* is an assessment of the research findings based on “when participants recognize the reported research findings as their own experience” (Speziale, Streubert, & Carpenter, 2011, p. 453) and is established through prolonged engagement, persistent,

and focused observation, as well as data collection triangulation (Lincoln & Guba, 1985). It is important to note that I worked as the Coordinator of Nutrition for School Aged Children and Youth for the Province of NS from 2013-2017. As such, I have had extensive prior experience and knowledge of school food policy, practices, programs, and initiatives and working relationships with the school boards and school staff as well as parent groups. As previously mentioned, I was also a parent of three children in the NS public school system during this time. Nevertheless, as an exploratory investigation, I took actions to triangulate data by way of an audit trail, use of inter-coders, feedback from my supervisor, and discussions with my committee members. I also collected field notes of my interactions with participants. Due to my deep professional and personal experience in the setting, I also recorded my subjective experiences in field notes to provide an alternative perspective.

*Dependability* is a criteria used to assess the quality of the multifaceted processes of data collection and analysis (Lincoln & Guba, 1985). To address the issues of dependability, my thesis committee members' various perspectives have been considered to ensure agreement and verification on final themes and interpretations, which aligns with Tobin & Begley's (2004) view that the research process be logical, traceable and clearly documented.

Transferability and confirmability can only be addressed by those who intend to make comparisons of the research or who can confirm the research study results by reviewing or analyzing the study. *Transferability* is the degree to which the research findings of this inquiry can apply or transfer to similar situations (Lincoln & Guba, 1985). For the purpose of transferability, I used Lincoln and Guba's (1985) strategy to

create an “audit trail” or thick description of procedures, data, and findings to ensure the ability to transfer the conclusions of this inquiry to other cases or settings. *Confirmability* is a measure of how well the researcher demonstrates credibility, transferability, and dependability (Lincoln & Guba, 1985) and requires the researcher to demonstrate how conclusions and interpretations have been reached (Tobin and Begley, 2004). I addressed confirmability through an audit trail (a sequential record of decisions), inter-rater reliability when coding data, and journaling throughout the study whereby I engaged in reflexivity, recognizing my worldview and beliefs and how that has influenced my approach to my research question and methodological decisions (Golafshani, 2003).

Another concern related to trustworthiness is often related to depth versus scope with the intent to produce generalizable results. This qualitative study provided depth through semi-structured interviews so generalizability may be possible, which in turn may highlight the significance of this work (Stake, 2000). However, the specific context of the study limits generalizability to some degree. Nevertheless, the purpose of this study was to begin to understand how FL is conceptualized and communicated to students/children in NS public schools as it relates to applying literacy. Therefore, it is important to acknowledge this case study of socio-cultural influences related to FL may not be used to generalize findings but rather to offer insights into the complexity of FL in the 21<sup>st</sup> century.

## **5.8 Reflexivity**

Reflexivity is defined as the position of self in a qualitative research study (Creswell, 2013). This is a central element of ethnography. To be reflexive, it is important that the researcher is critically conscious of their own biases, values, and

experiences as it relates to the qualitative research study (Creswell, 2013). According to Creswell (2013), there are two aspects of reflexivity: 1) the researcher writes about their experience with the phenomenon under study which involves sharing past experiences (work, school, family dynamics, etc.); and 2) the researcher discusses how these past experiences have influenced their understanding of the phenomenon. Therefore, it is essential that the critical ethnographer attempts to integrate and systematize self-reflection (i.e., reflection on the researcher's biases) throughout the study via journaling and in writing up the research findings to add experience, value, depth and richness.

As such, I understand that my positioning as the researcher is reflected within the research by way of continuing to create knowledge and understanding about the research focus through documenting my own actions and thoughts. For that reason, and in an attempt to create a routine of reflexivity, I implemented my own research routine. I considered each participant's multiple realities regarding FL experiences in the school community, and documented my own standpoint, including compelling questions that emerged over the course of my reflexive journey. This practice of reflection throughout data collection and analysis resulted in a sincere appreciation for my own subjectivity and how it represents my interpretation and understanding of participant perspectives.

## **5.9 Guide to Empirical Chapters**

In my analysis, the contribution of this study and its findings come from the researcher's credibility and methodological rigour, as outlined above. In the subsequent chapters (Chapters Six and Seven), I present my findings and Chapter Eight presents my discussion. The concluding chapter, Chapter Nine, revisits my original proposed *FL*

*Conceptual Model* in Chapter Three and situates it as a conceptual framework characterizing this “case” of FL.

## CHAPTER 6: DIMENSIONS OF FOOD LITERACY

The previous chapters laid the foundation for discussing my findings by presenting my research aims, literature review, conceptual model, research methodology and design. In this chapter, I present the deductive coding and data analysis techniques previously described in Chapter Five to understand how *FL is conceptualized and communicated*. The purpose of this chapter is to test my proposed *FL Conceptual Model* (described in Chapter Three). This chapter will present two distinct sections against the dimensions of FL which will respond to my specific study aims: 1) explore the meaning of FL, and 2) explore the components of FL within the context of school communities. The findings presented throughout this chapter will provide some insight and interpretation into the thinking as it relates to FL in NS. First, I will share information about the setting and the rationale as to why it is such a rich environment for better understanding FL as well as information about the participants in the study for additional context.

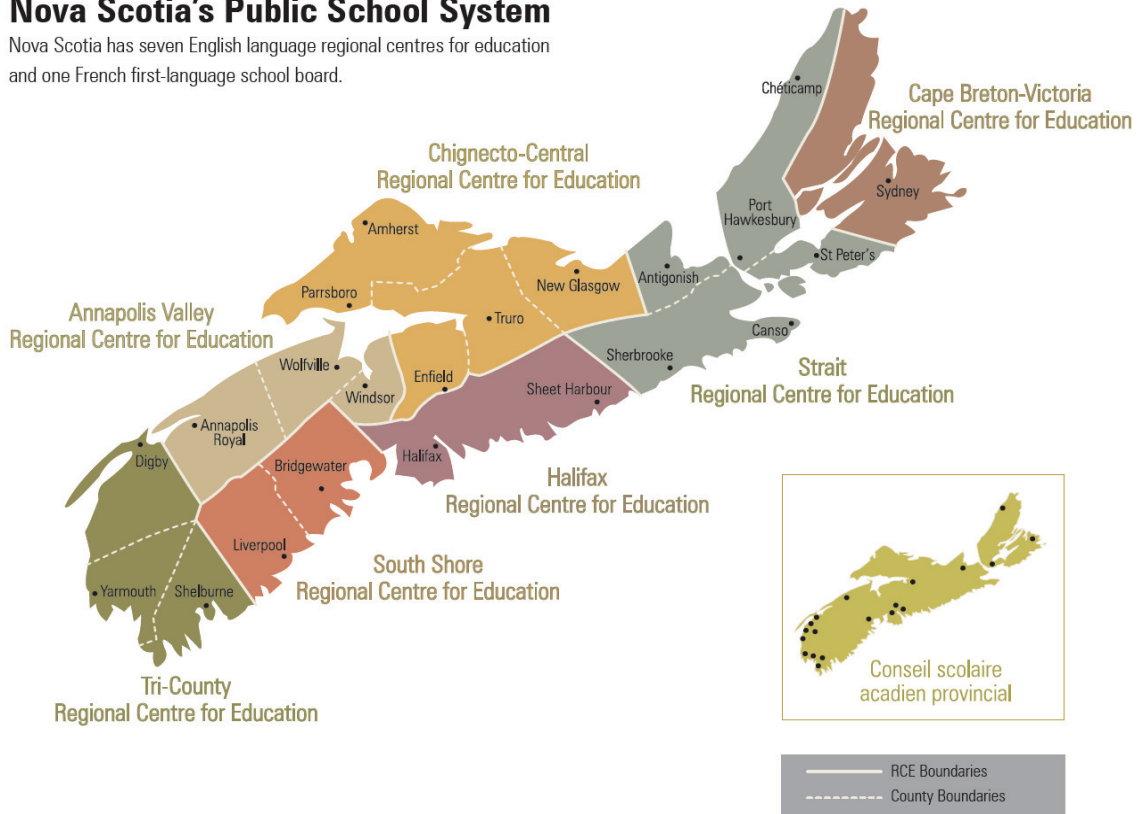
### 6.1 Provincial Context

The province of Nova Scotia (NS) public education system is led by the Department of Education and Early Childhood Development. Public schools operate for about 5-6 hours per day. The NS public school system has seven English language regional centres for education, one provincial French school board (as visually depicted in Figure 4), as well as one Indigenous school board (Mi'kmaw Kina'matnewey). For the purpose of this study, I recruited participants from the English school boards only (Table 8).

**Figure 4. Visual Representation of NS Public School System**

**Nova Scotia's Public School System**

Nova Scotia has seven English language regional centres for education and one French first-language school board.



**Table 8. Number of Schools and Geographic Characteristics of Regional Centres for Education**

School Board	Number of Schools	Geographical Characteristic
Annapolis Valley Regional School Board (AVRSB)	44	Rural
Cape Breton-Victoria Regional School Board (CVRSB)	53	Rural
Chignecto-Central Regional School Board (CCRSB)	70	Rural
Halifax Regional School Board (HRSB)	149	Urban
South Shore Regional School Board (SSRSB)	26	Rural
Strait Regional School Board (SRSB)	24	Rural
Tri-County Regional School Board (TCRSB)	36	Rural

## **6.2 Participant Context**

This study recruited teachers and parents of children currently in NS public schools across the province for a more holistic approach to understanding FL in NS. A total of four of the seven regional school boards are represented through teacher and parent participation in this study. The teacher and parent participants represented in this study denote the following diverse school characteristics: geographical dispersion of school communities, all levels of school (i.e., elementary, junior high, senior high), as well as political, social, and economic contexts. Pseudonyms were assigned to the participants in this study in order to protect their identities.

### **6.2.1 Teacher Participants**

Teacher participants represented three of the seven regional school boards (urban and rural locations), both male and female genders, and all levels of school. Further, there is some representation of socio-economic variability of schools as participants described teaching in affluent and lower socio-economic school catchments. Teachers ranged in experience from 5 years of teaching to retiring as a principal with 37 years of service. Finally, two of the nine teachers had received formal education in nutrition with a degree in Applied Human Nutrition. A complete list of teacher participants and a brief description of their context, as identified during the interview process, is provided in Table 9.



*Table 9. Teacher Profiles*

<b>Participant</b>	<b>Gender</b>	<b>School Level</b>	<b>Grade</b>	<b>School Board</b>
T1	Male	High	10-12	CCRSB
T2	Female	High	9-12	SRSB
T3	Female	Elementary	3-4	HRSB
T4	Female	Elementary	Substitute	CCRSB
T5	Female	Elementary	Primary	HRSB
T6	Female	Elementary	Principal	HRSB
T7	Female	Middle	7-9	HRSB
T8	Female	Elementary	4-5	HRSB
T9	Male	Middle	7-8	HRSB

### **6.2.2 Parent Participants**

Parent participants represented three of the seven regional school boards (urban and rural locations), both mothers and fathers, and all levels of school. Further, four of the eight parent participants were members of their local School Advisory Council. A complete list of parent participants and a brief description of their context, as identified during the interview process, is provided in Table 10. It is important to remind the reader that the recruitment process was iterative through social media. Parents interested in the participating in the study were to contact the researcher. As such, it is important to acknowledge no parents with children in rural elementary schools expressed interest in participating in this study.

*Table 10. Parent Profiles*

<b>Participant</b>	<b>Parental Role</b>	<b># children attending school</b>	<b>Level of school</b>	<b>School Board</b>
P1	Mother	4	Middle and High	HRSB
P2	Mother	1	Elementary	HRSB
P3	Father	3	Elementary	HRSB
P4	Mother	2	Elementary/Middle	HRSB
P5	Father	2	Middle/High	SSRSB
P6	Mother	2	Middle	CCRSB
P7	Father	2	Elementary	HRSB
P8	Father	2	Elementary	HRSB

### **6.3 Dimensions of Food Literacy**

This section of my findings examines the teacher and participant interviews in order to test the relationship of the FL dimensions within my proposed *FL Conceptual Model* (Chapter Three). My proposed *FL Conceptual Model* provides a means to address my overarching research question “*how is FL conceptualized and communicated in NS public schools?*” by uncovering the knowledge creating and sharing practices of selected teachers and parents. Furthermore, the testing of my FL conceptual model allowed for exploration of 1) the meaning of FL, and 2) the components of FL in order to meet two of my research aims.

#### **6.3.1 Meaning of FL**

The complexity of literacy is varied by way of different literacy levels as well as varying meanings with multiple perspectives and viewpoints often intersecting and overlapping, this means it is difficult to ascertain one universally shared meaning of literacy as evident in the literature pertaining to definitions of FL. I examined the

multiple perspectives reflected within the teacher and parent interviews searching for evidence of specific literacies and/or competencies and components related to FL.

Themes reflecting various literacy practices derived from the multiple data sources were mapped to my proposed *FL Conceptual Model* under the UNESCO (2006) umbrella definition of literacy's broader categories: 1) autonomous set of skills; 2) text; 3) learning process; 4) applied, practiced, and situated; and, 5) societal transformation. These varying theoretical understandings of literacy, as described by UNESCO (2006), are relevant to my research related to socio-cultural context. All evidence cited was taken from teacher and parent interviews.

#### **6.3.1.1 FL as an autonomous set of skills**

Traditional (fundamental/functional) literacy often revolves around a neutral set of skills and competencies (reading, writing, and arithmetic) within the school setting. Analysis of the data demonstrated that teachers and parents considered approaching the FL set of skills as social practice which go beyond reading, writing and arithmetic, and equating FL skills to “life skills” - the abilities that enable individuals to function effectively in everyday life.

Both teachers and parents illustrated making connections through empirical/analytical knowledge and skills, via functional (discourse) and interactive (hands on) literacy, as a way to create ‘meaning’. The ability to perform in the kitchen via food safety practices as well as enhancing nutrition knowledge through discourse are identified as **health and nutrition literacy skills**; as T1 conveyed:

*when my kids go off to work, they already have their food safety training, I can teach them that and they know, they're quite knowledgeable in the kitchen and most of them, you know they have decent knife skills and they're ready for that.*

*But I teach, sort of teach as we go and if the kids have any questions like what's that or what's this and then I will explain it so yah. It's more like life curriculum down here right, it's relevant to them and they learn and like I don't need to give them any other instructions.*

Creating the space for children to learn about healthy eating via building and improving cooking skills through 'cooking from scratch' is identified as a **nutrition literacy** mechanism to foster knowledge and skills by both teacher and parents. P5 explained:

*I think it's just really you know parents have to take their role in parenting and have to take their role of being the person in charge and being the person to teach their kids and to train their kids to enjoy healthy eating and to learn how to make recipes and foods that integrate fresh vegetables and fresh produce and fresh you know ingredients and that of course starts with a parent. At our house we have cooking classes with our kids, and you know show them literally through ingredients and through using cookbooks how to make a lasagna but from fresh ingredients and how to make those scratch-made recipes that were just the norm for our grandparents and even for our parents but I find that you know our generation, the younger generation especially, it's just everything's so pre-made and pre-packaged that if we don't [teach] our kids even how to cook they won't have those skills to be able to even want to make healthy food or fresh food.*

Another identified approach to building knowledge and skills is through the ability to plan meals/menus or perform specific kitchen tasks, which aligns with the **nutrition literacy** domain as P4 identified:

*I would love to see kids be involved in not only maybe planning the menu but why couldn't they help prep some vegetables or peel some carrots or something right? Like why couldn't they have a time in the day when they're helping, if it's a resource issue for staffing in the cafeteria, then let's put them to work, stuff like that, it's a life skill right? Cooking skills are a life skill and I think people are losing those skills so it's important.*

Similarly, T9 discussed opportunities to build kitchen skills:

*in grade 8, there is a food and nutrition component of family studies and so that is where that would happen; so there are recipes that the teacher has developed and they do develop the skills - cutting, measuring, cooking and they do taste the food that they create.*

Using functional and interactive literacy (experiential learning) to build knowledge and skills around cooking is not exclusive; gardening as an **agri-food literacy** tool, and grocery shopping and food preparation as **nutrition literacy** techniques are identified as experiences for applying hands-on learning. T8 shared:

*My class planted carrots and as a school we all kind of plant something and then the students who are in grade 4 only, I think it's only grade 4, they are in like a gardening club and they learn more in-depth about whole foods and that sort of thing, about growing food and they actually practice making things like fresh salsa, zucchini muffins, root vegetable salad, different things like that.*

Increasing knowledge and awareness of healthy foods and introducing discussions about the variety of foods as opposed to convenience foods is identified as a key literacy technique to build **nutrition literacy** skills as well. T4 described this process:

*I could make the grocery list with them, they could identify healthy foods, I'd go and get them and then we'd cook them. So, kind of you know...there are other options out there not just your convenience foods.*

T2 asserted another approach identified in order to increase FL skills is to broaden our thinking of a skill set to include our relationship with food; this includes **food knowledge, skills, and attitudes** to boost **confidence and motivation** in order to make healthy food choices:

*I think that in addition to nutrition education, there has to be education around our relationship with food, cause I think that's a huge factor. And our motivation and our value system...I think when it comes down to it all and it's their values and the behaviours they see at home cause once they establish those habits, they're really hard to change. I think that's huge so I think that the school system provides a fraction of what the needs are and I think that whatever happens in school doesn't necessarily change somebody's behaviour... but I really feel like there has to be or should be a lot of just, not even parent education, not even that, it's just it goes so far beyond that. I think we have to really understand and educate each other about our relationship with food to be honest because I think that that's what is talked about and I think that's what's not talked about.*

Finally, the importance of making informed decisions and judgements about marketing and advertising through the ability to understand and dissect food advertising, an element of **media literacy**, and a dimension of critical literacy, was also recognized by both teachers and parents as a FL competency. P8 emphasized:

*I mean, you know, it just becomes more important for kids to be media savvy when more and more they're just bombarded by different messages.*

The above noted literacy approaches, techniques, and/or competencies consider aspects of health, nutrition, agri-food and media literacy skills which align with my proposed *FL Conceptual Model*. Elements of critical thinking skills related to culture, civics and eco-literacy were not discussed from a skill perspective.

### **6.3.1.2 FL as text**

Interacting with different types of text may shape FL experiences and competencies. Considering the multiple literacies identified in my proposed *FL Conceptual Model*, deducing 'meaning' through various texts, such as written, verbal, and visual are reflected in this section.

From the perspective of **health and nutrition literacy**, seeing and hearing elements of FL are identified as key contributors to competency development. Discussions, as a form of text, around the dinner table is one approach to communicating FL, as P3 described:

*we always, have always and still do, explain to our children how important it is to eat healthy and how that's important to their health, to their physical wellbeing, their mental wellbeing and we always encourage them to bring healthy food to school and the effects it has on their school performance as well knowing that, you know we want them to know that if they eat well then they're going to feel better and be more attentive at school, pay attention and be more successful at school as well.*

T9 identified discussions and role modeling in the classroom as key verbal and visual "textual" tactics:

*having the conversations in the classroom do help because that's when you really get to see people's perspective on food and I can only speak to my classroom... but it does come up where we talk about nutrition break and why is it called nutrition break and what is the purpose of it and things like that so I think having those conversations you know does help. And I'd like to say I have no hard data to support this, but... the teachers modelling or sorry, the teacher not modelling "unhealthy" eating, I really do think that has an impact, to what extent I'm not sure. The reason I know that is because the one or two days where we forget, that's when the conversations happen and it's 'oh you had a doughnut for breakfast, why did you have a doughnut', you know what I mean?*

Written (text) confirmation from parents to teachers applauding their literacy approach is another mechanism to support FL. Further, it was acknowledged that functional (speaking about food) and interactive (cooking) literacy activities in the classroom are often communicated at home, also resulting in students building their functional literacy skills in order to write about food and nutrition activities, as T5 described:

*when parents send me emails and stuff they say that you know it's, or even at curriculum night, actually parent/teacher not at curriculum night but parent/teacher in November parents say I have no clue what goes on in here on a day-to-day basis but whenever you've cooked I hear all about it. And that's right that's what we want, that oral language piece is so important especially in grade primary right, you need to have those ideas to be able to generate something to be able to write.*



Discussions, with regards to **agri-food literacy**, are another textual approach to literacy practices in schools. T1 deliberated on providing students a real-life experience that they could connect to for further discussions related to local foods:

*...so we were talking about [Local Restaurant] and the kids are like it's expensive there. It's really not that much more expensive than a [Burger chain] and the stuff that you get there. And so, then I said well, it's locally sourced. Well, what does that mean? So, we had this big conversation and so they're like well the lettuce isn't locally sourced in January and I'm like no it isn't but it really is for us.*

Another mechanism to consider as text is the excessive amount of marketing and advertising; this is a constant visual reminder of an environment plagued with unhealthy choices, and it represents **media literacy** concerns. T5 emphasized:

*you never see commercials on T.V. about apples, you see commercials about you know the really yummy stuff, like the stuff that our palates are craving, the stuff that tastes really good but is not so good for our bodies.*

while P5 declared:

*advertising...from Facebook to what they watch on T.V. to anything like that,...all the ads that you see coming up are [Fast Food Chain] or are food ads that are bad for them or you know any type of pop that they have to try or any type of, you know nothing advertisement wise is healthy for them.*

and P7 stressed the proliferation of candy and treats (visual text) is yet, another concern:

*there's a reason why there's such a strong perception that candy is a treat, or that you treat yourself to something when you eat something sweet because it used to be not so bountiful. It was not like easily available in the past so that sweet things*

*were something special, now that it's industrially produced, it's kind of like almost you know the fire hose comes down at you.*

Appreciating and respecting different cultures (**cultural literacy**) is identified by both teachers and parents; however, P7 perceived that a potential language barrier (verbal text) is likely impeding the ability to be inspired by cultural knowledge and skills firsthand:

*I think there's a lot to draw on from wisdom and cultural knowledge from immigrant groups who are actually used to their own gardening and things like that but there's a language barrier and maybe a cultural barrier because some of the Syrian families seem to be kind of hesitant to kind of jump in and you know, they're rather shy I find, especially the women. But there's lots of potential there because the school is, has probably the highest rate of and number of nationalities.*

Nevertheless, it was noted by T5 that appreciating foods from other cultures in the school setting may not be possible due to allergies (visual text):

*The cultural, when you say cultural piece, the thing that I find difficult with, especially the younger grades, is we constantly tell kids not to share their snacks now, for many reasons, allergies being the first one. And when I was a child that was a big thing, you'd sit around and you'd share your food so you, taste testing became natural. So we've kind of squelched that because of the allergy piece.*

The ability to critically think and act on food and nutrition issues was also identified by teachers and parents. Some participants believed advocating is essential to create change; this is a key element of **civics literacy**. T9 expressed the need for the SFNP (written text) and school food environment (visual text) to be harmonious:

*there are a lot of people sitting at that [policy] table and then there's really like the, there's this space in the schools where teachers are focusing on classroom instruction but at the same time need to you know make sure that students are getting the messaging that would help to create that healthy school food environment.*

P5 echoed the sentiment that the written and visual text in schools need to align:

*I think a policy is great if it's going to be integrated right, if a policy is put in place to give kids healthy food in school that is integrated into the school, of course it's a fantastic idea hence why you know we should have community gardens at every single one of our schools, and we should have healthy lunch programs available. 100% it would be fantastic for our kids to have that in place in school. If it's done right.*

The desire for government to provide stipulations related to marketing and advertising connects with aspects of critical literacy effecting social change through **civics literacy**.

P8 emphasized the need for government to have a larger voice (verbal text):

*I think, you know there's so much influence from advertising, corporations, it's hard to, it's hard for kids to ignore that. As to who else can influence it positively, I mean I think government leaders need to be more outspoken about the importance of this from a public health perspective.*

P3 conveyed the need for regulation (written text) to mediate the marketing to kids concerns:

*I know that a lot of companies market directly to kids and that's kind of, there's some ethical questions about that because they're not, as you know marketing is*

*not always honest about what's in their food and the effects that they can have so there's I think some pretty dodgy marketing going on and to kids, but that can be improved and I think should be, it would be nice if that was addressed and regulated maybe, by the federal government, I think it's their responsibility.*

Finally, understanding the impact of food waste, reflective of critical literacy as an element of **eco-literacy**, is identified as a competency by teachers and parents. By way of verbal and visual text, T5 discussed the use of reusable containers in the classroom while role modeling, as well as composting and recycling; this demonstrates knowledge and awareness of food and agricultural systems and their relationship to environment via functional and interactive literacy mechanisms:

*We talk about like reusable containers like I model my reusable containers and stuff like that, and then we do have like the recycling and stuff and we have a compost in our outdoor garden and then we have the green bins in our classrooms.*

Supporting this notion, P2 stated the school is highly versed on the environment and asserts the SFNP (verbal or written text) promotes less food waste and encourages the use of reusable containers:

*school they're really versed on, like it's the environmental piece, right? and anything that you bring, I think this is quite a good policy around food at her school, anything that you bring in your lunch goes home in your lunch. Like all the wrappers, so that your parents can see what you ate. I think that's part of it. So, if you send a juice box, and empty juice box comes back home. So, it's a bit cumbersome when you send packaged items because all the dirty packaging, like*

*the yogurt container and stuff like that come back in your lunch bag. Um, but it makes a lot of sense because you can see what the kids eat plus it makes you really aware of the waste that your sending in your kids' lunch, right? So, it kind of encourages you to use reusable containers because it's so much tidier to get those back home.*

While examining influences on literacy via the different modes of text, it became apparent that some literacies are more noticeable and influential than others; but that all components of my proposed *FL Conceptual Model* are characterized within the concept of literacy as text.

### **6.3.1.3 FL as a learning process**

It is commonly understood that we learn from our past understandings and experiences and we therefore may acquire knowledge, skills, and attitudes through different mechanisms. By way of example, while we may adopt a new idea through discourse, we may learn skills by applying and practicing them. From this point of view, the learning process aligns with the social environment impacting teaching and learning practices through relationships and resources.

The value of building food knowledge and skills within the school setting is recognized by teachers through the socio-cultural influence on food choices and eating practices by way of children transferring their knowledge and skills to their parents through familial relationships. T5 highlighted how **health and nutrition literacy** approaches are used to increase knowledge and skills, such as cooking and reading recipes, as well as the ability to influence family in purchasing/cooking/eating decisions as key literacy techniques:

*when we went apple picking at [Local Farm], we made apple crisp and apple sauce, so and whatever I cook with the kids I want it to be something that they can, they don't have to go to a specialty store to buy, they can purchase at [Chain Grocery Store] or [Other Chain Grocery Store], like it should be made with kind of everyday sort of things so that at home, the purpose is so that when they're cooking at school they're kind of following the procedure and kind of knowing what kind of goes on, and then when they go home and they talk about it, you know parents will kind of have an idea you know what apple sauce is and stuff but it's either easily googled or something for a recipe, but it's something they can also make at home with their parents and they can teach their parents how to do it sort of thing.*

P6 presented another strategy to **health, nutrition and eco-literacy** through learning about FL by means of preparing food shopping lists, grocery shopping for more plant-based foods, and fostering food preparation skills all while role modeling:

*groceries are so expensive now but like you know if you move a bit away from meat which can be more expensive towards kind of eggs and beans and yah making some homemade things ahead then you can eat a bit healthier, so yah also the grocery shopping element and then what to do, yah making shopping lists of healthier foods yah to go with those strategies.*

T4 declared value in the process of teaching food skills across the curriculum from both a functional (knowledge about health and nutrition) and interactive (applying skills through math, science and social studies) perspective; which may align with **health, nutrition, agri-food, civics, and eco-literacy**:

*I think we can definitely implement more into the curriculum...we learn about food groups, like there's, right from meal planning, like that can be implemented into like kids' math lessons and social studies, like there definitely can be more relatable, hands-on materials worked into the curriculum. I mean yes, it's important that we learn math and sciences but so much of that can be intertwined with health and nutrition and it's such a, it's the basis for our whole lives so I think it's important that we do that.*

Parents also agreed food is rich with opportunity to learn and can be used across the curriculum, from functional literacy (reading, writing, math) to interactive literacy (cooking, food preparation, cultural foods, cookbooks and recipes); supporting the previous noted literacies as well as **cultural literacy**. P7 suggested teachers should:

*use food as a sort of food related topics like cooking and food preparation, growing food and all that as part of the regular curriculum, not just kind of as an island topic. Um, so you know in science like, there's a lot of science in cooking, you can do math by calculating how much money you need to feed your family, um you know then, price per weight, price per volume, price per nutritional density... There's so much you can do, science around food and um also the social study type aspect or all the words around food. You can you know, you can read and write cookbooks, you could have kids write recipes as a literary format and exchange them, so much you can do.*

P6 valued the process of engagement with food in school gardens to learn where food comes from and how it is grown (**agri-food literacy**):

*the schools that have gardens like engaging with how the food grows is I find with young kids is really like an exciting way to be engaged with healthy food.*

In considering a revision to the SFNP, P3 discussed the process of using verbal text to increase knowledge and awareness but also using connection to familial experiences as a teaching tool; this aligns with **civics literacy**:

*I think if they revised it, it would probably be a topic of conversation at the dinner table with the kids and I think it would get discussed at some point yah. It would get discussed and we would use it as an opportunity to sort of tell them how we feel, we've done that, we would use it as another opportunity to have that conversation with our kids and to demonstrate the importance of it.*

Finally, the approach teachers take in the classroom is dependent on their comfort level and training, depicting teacher **knowledge, competence and motivation**. T8 presented the argument that:

*There are opportunities but that differs teacher to teacher. So where one person may choose to take their class downstairs to the staff room or to, our French room happens to have a fridge and a stove, so if the teacher chooses to go and do those things, then the kids will have access to it, but you can also cover those outcomes by just talking about it and looking at packaging and not actually being hands-on with it. So that's going to come down to teacher training and access in the school.*

By way of example, T5 applied a universal approach to teaching students through food. In applying this technique, the students were deemed to be building knowledge and skills, by means of something they can connect with:



*I think that also because not every child goes to the cottage on the weekend, not every child goes swimming on the weekend, not every child, sometimes parents are working and they're not able to get out. These activities give everybody something, if they say I don't have anything to write about, there's a common thing that it is an experience but I know that the experience, that they can write about if they so choose, if they don't, are having trouble generating a different idea.*

Emphasizing and supporting the process of learning, T2 reflected on the process used to improve functional and interactive literacy through sharing and exchanging ideas with another teacher to increase FL skills by means of a collaborative approach:

*in grade 10, it's called food technology that's half a credit, and then the other credit is called food prep and service. So with all of the outcomes in those, like they're two half credits that make up a whole course. There's no nutrition education in that so what we did was, myself and another teacher teach it, we changed it so that the grade 10 course next year is going to be called food for healthy living and that's all nutrition. So that, instead of food technology being paired with food prep and service, we're doing healthy, food for healthy living paired with food prep and service. So the science teacher who's paired up with me to do it, she teaches the theory part of it and I do the practical part so I'm in a lab with the kids while she does the nutrition part.*

During the exercise of examining literacy as a process, it became apparent that the development of knowledge and skills is a function of the process of learning as well as a product of this process. Through this analysis, I was able to identify all components of

my proposed *FL Conceptual Model* characterized within the concept of literacy as learning process.

#### **6.3.1.4 FL as applied, practiced, and situated**

Literacy as applied, practiced and situated involves language and practices constructed through one's upbringing and experiences. As previously stated, the application of literacy is context specific through social situations and interactions which requires a person to apply what has been previously learned in new ways to new situations.

Teachers and parents described social interaction, background, and experience as key components of situated learning. P3 expressed the influence of operating within their own cultural and social contexts at home to support **positive attitudes and values** towards food:

*we have always promoted an attitude of being open-minded with food and I think it's really paid off because our kids will eat anything. They know we will try anything as well so I think they've learned that open-minded approach to food, especially when you compare to other kids. Like we see in our friends' children and our relatives' children, and the comments they say to us, they're always pointing out my god your kids eat everything, they'll eat that, they'll eat this, they'll eat that and so it's kind of nice feedback for us that we're promoting that open-minded attitude towards food and to not be afraid to try different things.*

P6 mentioned family meals as a key opportunity to discuss and model healthy eating, which promotes **health and nutrition literacy**, but discussed the innate challenges associated with the value of food versus time:

*one thing that I firmly believe in is that sitting around a table and taking time to eat supper is a time to kind of learn about food and model healthy eating and a lot of extracurricular activities are booked at supper time and so it's really challenging as a parent to have that sit down meal as a routine and I think that has a negative impact on healthy eating and so yah that kind of grab and go culture not putting enough thought and time and preparation into what you're eating.*

T9 acknowledged student **situational and personal context** as a key impact on how individual experiences are developed:

*at the end of the day we're trying to teach something to our students and so you have to look at student engagement and that has many factors from you know their experiences, the adult at home, the marketing piece we talked about, you know their postal code changes, could change their engagement with something like healthy eating.*

Applying and situating literacy practices through an interactive approach in schools has had a positive impact on promoting **health and nutrition literacy** for students who live in vulnerable home situations through providing opportunities to nurture optimistic attitudes towards healthy food, as T1 described:

*At the start of the year we do a corn boil for the staff as a social function for the staff, their spouses, partners, children whatever and so we normally do about 20-25 dozen cobs of corn...the extra corn that's left over, I did a corn chowder with it for the first time; because there's peppers in it and they [students] have to cut the peppers, they have to dice the pepper, they have to dice the onions and it's*

*really good practical activity to get them thinking about food, to get them thinking about proper cuts and cooking methods and stuff like that and so many of them are I'm not trying that, that's gross, but when they try it they're like this is really good. So, but they never in their life had the opportunity to eat something like that.*

On the other side of the coin, due to a school being situated in a more affluent neighborhood, T6 did not see the utility for a breakfast program, though expressed valuing positive attitudes and social relationships associated with a fresh fruit snack program in the school, which in turn, promotes **health and nutrition literacy**:

*We do not have a breakfast program here. There isn't quite the need but it was, April, May and June here every morning I would put fresh fruit in classrooms so they would have apples and oranges and pears and bananas, whatever I could get... the baskets were cleaned out every day and I had comments from parents at PTA and SAC meetings saying 'I send fruit and they don't eat it but they'll eat what's in the basket'.*

Both teachers and parents describe balancing healthy and less healthy food options during special occasions at school and the prevalence of these occasions, which may impact **health and nutrition literacy**, as a social practice often applied in the classroom. P2 elaborated:

*I see that parents in general influence the [school] food environment...when you bring in food to share with the class and usually when you bring in food, when it's an occasion where you bring in food to share in the class the tendency is to bring unhealthy food. because it's a celebration, otherwise you don't bring food to*

*share with your class and so...realizing that the norm is you often celebrate happy occasions with treats, but that there is like twenty kids in the class and, you know, a whole bunch of other kids are bringing in likely, you know, the cupcakes and the cookies, and stuff like that. I will try to send like a healthier option to kind of balance out that. So it's not that I am saying that's wrong, like that we shouldn't be sending those treats in because actually I really don't have a problem with that, although sometimes there's a high frequency of these special occasions which can be a little problematic but I don't actually, like I'm not actually opposed to the occasional treat.*

Growing school gardens is identified as a component of **agri-food literacy** to cultivate positive attitudes, values, beliefs, and discourse as T5 expressed:

*I just think it's so important for kids to see the things growing and to plant it from seed, come back and visit it over the summer and then cook with it. Or it doesn't even have to be something you cook with, something you eat, carrots, right, yah. So something like that.*

The social practice of developing knowledge, skills, and attitudes was acknowledged by P5 while discussing a farm box fundraiser which, in turn, improves student **agri-food literacy** skills while building **civics literacy and eco-literacy skills**:

*There was like a food box giveaway [fundraiser] that the kids did...to raise money for their school last year. They only did it I think maybe once I think it was in the fall, and you bought a box of food from different local farms as you would with a normal boxed-food program but all of it was healthy and came from locally sourced farms and small vendors and such and the kids were really, they thought*

*it was a really fun program to do and once you get kids passionate about something, then they come home and they're like o.k. well can we go sell, I need to sell 10 of my boxes, can I go sell them to the neighbors? And that was really something that they found to be cool, I mean getting back to the actual grassroots.*

Teachers explained how marketing and advertising (an aspect of **media literacy**), which is outside of both the school and home, has an impact on students' attitudes and values.

T3 asserted:

*I think just the society we live in is you know the sugar and the advertising is everywhere. We may take them away from the advertising while they're on [school] campus but it's prevalent, yah.*

Supporting this assertion, T9 provided an example of how advertising affects students in the school by describing common language, values, attitudes, and social relationships as key factors of students as consumers:

*[Advertising] most definitely has an impact. And I say this because...you'll see... three students with you know [new food product] and then the next week you'll see ten students and then whether it's healthy or not... I can only assume that they're getting messaging towards that product from a form of advertising. And that would definitely be external to the school environment.*

From a **cultural and civics literacy** perspective, most parents acknowledged different contexts and experiences should be respected and common approaches should not be imposed. P1 remarked:

*Whether it's cultural difference, whether it's different appetites, different mental health issues, you know every kid is different and trying to force them all to behave the same way and just to relax a bit more.*

While some teachers reflected on different communities' attitudes and values through social structures and relationships; T7 stated:

*And I think culture also plays in like depending on whatever community the school is in, it's reflective of the culture of that community so if the community you know doesn't have kind of, isn't promoting kind of healthy choices and stuff like that at home, then...when their kids get to junior high [and] they're able to leave the school grounds...they have this insane sense of freedom...that gives them kind of access to those places outside of the school where the choices are far more vast than what they have at school...I've had kids come back from lunch with 2 litre bottles of pop because they're cheaper than a can of apple juice, or a bottle of water at the school or anywhere else.*

Some teachers appreciated bringing food into the classroom as an educational tool to foster knowledge and skills and discuss the idea of utilizing cafeteria food as the mechanism to teach about the multiple dimensions of food by means of exercising democratic choices; this aligns with advancing **civics literacy** skills. T4 explained:

*To have some [cafeteria food] education in the classroom, if the teachers can work it into the curriculum and the day-to-day then hopefully, they're rubbing off on their students. And a lot of it is homemade. Like a lot of the cafeterias now are moving to actually making stuff at the schools so it seems like they can, it is possible for them to use you know better ingredients and more vegetables in their*

*products and really if they limit their choices and offerings to healthier choices, then the kids are going to really not have a choice but to have those healthier options.*

Another perspective that was captured is the aspect of the environment and connecting food, health and planet as active citizens; this aligns with aspects of **eco-literacy** and critical literacy. T6 highlighted:

*'Cause they really look at that environmental piece... you know what are we doing to our planet, what are we doing to our animals and it's a whole philosophical piece that we need to be open to and when people are thinking that way then it's easier than when they're not thinking that way.*

Each of the components within my proposed *FL Conceptual Model* were reflected through learning as a function of the activity itself (applied) while considering the context and the culture (situated) in which it is practiced; and often overlaps with the notion of FL as a learning process.

### **6.3.1.5 FL as societal transformation**

Historical, political, economic, and cultural factors are recognized as the leading influencers in the evolution of literacy. These contextualized influencers are embedded in our everyday lives, whether at home, school or in the broader society. As each of these contexts change, so does the meaning of literacy. Therefore, analysis of the data had a focus on exploring broader social context and demonstrates how teachers and parents are situated as active participants and actors in social change.

Teacher and parents recognized there are social changes required in the school environment as it relates to **health and nutrition literacy**. A desire to change **social norms** around how schools view food was a key concern for parents; as P1 stated:



*the number one change that would make it easier is for schools to accept a culture that you know eating is fueling your body.*

P3 agreed and asserted:

*I think just promoting it to the where it's normal, promoting it to the point where kids will feel like if they eat healthy it's not out of the ordinary do you know what I mean? So, there's no stigma attached to like bringing a really healthy lunch you know, or kids won't feel like if they bring a really healthy lunch with no junk food, there won't be any stigma with that, I think.*

P6 stated the social norms, to fit in at school, may be to blame:

*I find the social pressure at school for children to kind of feel safe and fit in and the rushed environment, like it makes it tricky to send the healthiest choices for lunch but I did, I mean it is the best way to send healthy food with your own students. But I find as a parent it's not always easy, it's not always the most popular choice, or it doesn't get eaten.*

T6 discussed a change in social norms for teachers as it relates to their **attitudes towards food and learning outcomes** may be problematic:

*sometimes educators get to the point well I'm supposed to be teaching reading, writing, and arithmetic, why do I have to teach all of this other stuff and so... it's getting that attitude that what a child eats and how a child feels will affect how that child learns and what they feel about themselves. So that whole attitude piece I think is very important.*

There seemed to be a tension between the **value of food** versus the **value of eating** in which the school environment is identified as offering not so healthy food options for vulnerable students, as T7 described:

*we're [at the] end of the socio-economic spectrum so there were times when students came to me and said I haven't eaten in a couple of days, can you get me something to eat, or students would tell me they didn't have anything for lunch, things like that so just having access to food and promoting eating was something that I had to do and in the school I worked when a student came to me and said I haven't eaten, do you have any food, my choices for what food I could give them were not the greatest...but the food choices that I had to give them in that situation were not ideal but I guess in that situation something is better than nothing.*

T1 acknowledged socio-economic status within this dichotomy;

*I think that it's important that we recognize that we know what the ideal is, we get what we should do, but I also have worked with kids of so many different socio-economic, various backgrounds and there's so many different factors that come into play that we have to make it very realistic and attainable for people too. Food security is a huge issue and fresh fruits and vegetables for some people is just not an option all the time.*

However, P2 spoke to the challenges of enticing children with healthy food options versus treats as a social norm that needs to be remedied:

*I think there's that tension around, like, appealing to the kids, and meeting like healthy requirements. And then I also think there's this sense around, like, people*

*wanting to do something nice. Like people want to do something nice for kids often involve getting into unhealthy foods*

Whereas the **value of balance** in the school community and eating for well-being while allowing for treats was expressed by T6:

*when everybody is thinking in the same line, that you know when you're in a community that which I find this one is, that health is a big thing, that awareness, that understanding that you know our bodies can only take so much and how to make those healthy choices, and when people understand balance because I mean you have to, a child has to have a chocolate bar once in a while, they have to have a bag of chips once in a while but it's all about that balance piece.*

At the same time, the need to change the school food environment was also acknowledged by both parents and teachers. It seems the lack of **value on food programs** in the school environment was acknowledged as problematic, as P5 stated:

*I'm like wow, right so I mean it's, food's crazy, it's everything that's wrong really in our system is, comes down to like just somebody having the time and the funds to be able to start a food movement in schools in Nova Scotia. And you know with so many farm markets in the valley and you know how many different farmers are willing to even sell their produce at a cheaper rate to schools or to food programs and such, there really shouldn't be any excuse for why we're not doing it right.*

T9 stressed the school environment requires a mandate to place **value on gardening** as a food program (**agri-food literacy**):

*you know gardening is a stress reliever, it allows children to be more involved in seeing kind of how food comes to their plate, but unfortunately I think it came*

*down to, especially with current political climate asking staff to do things outside of their job description unfortunately it's not written as a directive or as part of the expectations of staff.*

T2 explained there is a need to change the school environment to **value natural hunger cues** as opposed to forcing them to eat during bell times:

*I think when you're hungry you should eat and when you're thirsty you should drink. I think you need to listen to your body, and we're taught not to in school which is very robotic and it's not natural and I don't like that.*

Parents concurred. For example, P6 expressed how the **value of time** to eat within the school environment is not necessarily accepted:

*I find the social pressure at school for children to kind of feel safe and fit in and the rushed environment, like it makes it tricky to send the healthiest choices for lunch but I did, I mean it is the best way to send healthy food with your own students. But I find as a parent it's not always easy, it's not always the most popular choice, or it doesn't get eaten.*

P4 expressed the issue of food in school being something to check off the list of things to do as part of the school day:

*I think that culture around food is that it's not that important. It's one of those pieces of the day you just get through to make the rest of the day go smoothly and I think again, not having time to eat is a symptom of that not having a healthier menu or good staff at the cafeteria is part of that as well. Yah so I think the culture is maybe not valued as much as it maybe could or should be yah.*

As a result of broader societal issues, many parents often turned to fast and easy choices due to time-scarcity, as P4 described:

*families turn to a lot of convenience foods now because of the time pressures they're under and kids are in extracurricular activities and the family meal seems to be the thing that's gone from the list of priorities.*

Despite the many challenges noted above, teachers can be powerful agents of change, as T5 described through the following literacy activity:

*we also talk about giving back...at Thanksgiving; we make the soup but we also get a hamper together to feed a family so I will deliver it either to Beacon House or Feed Nova Scotia. I provide the turkey and then the kids bring in different things that they want to, help for a family's meals sort of thing. So, thinking about like giving back, like you know we're having this harvest soup and we're also thinking about others and going to give people the ingredients so that they can have a nice meal and make harvest soup too if they want sort of thing.*

P8 specified actions taken to develop critical literacy skills with students to decode media messages in an attempt to transform society (**media literacy**) as valuable:

*I think it's important to teach kids early on about the influence of advertising and to be able to think critically about messages that are coming up and from different media. And that's not just about food but that can be part of it, to understand that you know advertisers do what they do because they want you to buy their products and so you need to be careful about what you're listening to and what you're eating and watching.*

Finally, some teachers and parents recognized how the broader community can impact social transformation, reflective of critical literacy, as T4 described health nudges by grocery stores (**civics literacy**):

*I think there's positive pushes, like I think like the grocery stores initiative where they have like fruit that the kids can have while the parents are grocery shopping, I think that's really good. We need more stuff like that, cause I don't know if a parent, like sometimes parents don't even realize that their kids will eat that stuff and if that's a free option while they're grocery shopping then maybe that will prompt them to buy a bunch of bananas or some apples.*

Teachers and parents described many challenges related to food in the school context, most of which are related to the undervaluing of food. This is reflective of the deeply rooted attitudes within broader society. **Health, nutrition, agri-food, media, and civics literacy** were all identified by teacher and parents as components of FL for social change.

#### **6.3.1.6 Meaning of FL Summary**

Each dimension of my proposed *FL Conceptual Model* is demonstrated throughout the UNESCO definitions of literacy and situated within the context of self, school, community, society, and relationships, as referenced by participants. Hence, the meaning of FL has been described by teachers and parents in a socio-cultural context.

#### **6.3.2 Components of FL**

Considering the perspective of literacy as a social practice, multiliteracies highlight the context of the social and political processes enacted in the routines of the participants' daily lives. Since semi-structured interviews were my primary data-

gathering source, I cross-referenced my proposed *FL Conceptual Model* to the interviews and key policy documents in order to better understand the FL constructs under investigation from a holistic perspective. I examined the data for the existence of FL components identified in my proposed *FL Conceptual Model*: 1) health literacy; 2) nutrition literacy; 3) agri-food literacy; 4) media literacy; 5) cultural literacy; 6) civics literacy; and 7) eco-literacy. Data are presented in the form of tables with the intention of compiling organized information into a manageable and compact format.

### 6.3.2.1 Teacher Interviews

During my analysis of the teacher interviews, it became apparent that there were differences among participants in how FL was described within teaching practice. For example, all teachers (n=9) transferred literacy in the form of health and nutrition related concepts. Table 11 notes the taxonomy of literacies related to FL as identified in teacher interviews. In addition to health and nutrition related literacies, some teachers (n=7)

*Table 11. Taxonomy of Literacies Identified in Teacher Interviews*

Pseudonym	Health	Nutrition	Agri-food	Media	Culture	Civics	Eco-literacy
T1	X	X	X	X	X	X	X
T2	X	X	X	X	X		
T3	X	X		X			
T4	X	X	X				
T5	X	X	X			X	X
T6	X	X	X	X	X		X
T7	X	X			X		
T8	X	X	X	X	X	X	X
T9	X	X	X	X	X		

also imparted literacy in the form of agri-food literacy. Several teachers (n=6) also exposed media literacy and cultural literacy. However, only a few teachers (n=3) also

communicated civics literacy. Finally, a small number of teachers (n=4) also considered eco-literacy when reflecting on food.

### 6.3.2.2 Parent Interviews

During my analysis of the teacher interviews, it became apparent that all parents (n=8) conveyed literacy in the form of health and nutrition. Some parents (n=6) also transfer literacy in the form of agri-food literacy. Few parents (n=5) acknowledged media literacy while most parents (n=7) also communicated cultural literacy. All parents (n=8) considered civics literacy; however, few parents (n=5) recognized eco-literacy when reflecting on food. Table 12 notes the taxonomy of literacies related to FL as identified in parent interviews.

*Table 12. Taxonomy of Literacies Identified in Parent Interviews*

Pseudonym	Health	Nutrition	Agri-food	Media	Culture	Civics	Eco-literacy
P1	X	X			X	X	X
P2	X	X	X		X	X	X
P3	X	X		X	X	X	
P4	X	X	X	X		X	X
P5	X	X	X	X	X	X	
P6	X	X	X	X	X	X	X
P7	X	X	X		X	X	X
P8	X	X	X	X	X	X	

### 6.3.2.3 Food and Nutrition Policy for Nova Scotia Public Schools

Upon deductive analysis of the SFNP used within NS, all literacies identified in my proposed *FL Conceptual Model* were observed to some degree. Table 13 notes the taxonomy of FL explicitly reflected in the *Food and Nutrition Policy for Nova Scotia Public Schools (2006)*.



*Table 13. Taxonomy of Literacies Identified in the Food and Nutrition Policy for Nova Scotia Public Schools (2006)*

<b>Directive/Guideline</b>	<b>Health</b>	<b>Nutrition</b>	<b>Agri-food</b>	<b>Media</b>	<b>Culture</b>	<b>Civics</b>	<b>Eco-literacy</b>
<b>Directives</b>							
<b>Food and Beverages Served and Sold in School</b>	X	X					
<b>Clean Drinking Water</b>		X				X	
<b>Programming</b>			X			X	
<b>Pricing</b>						X	
<b>Fundraising</b>					X		
<b>Special Functions</b>					X		
<b>Promotion and Advertising</b>				X			
<b>Food as a Reinforcer</b>		X			X		
<b>Students Who May Be Vulnerable</b>						X	
<b>Portion Sizes</b>		X					
<b>Food Safety</b>	X	X					
<b>Nutrition Education</b>	X	X					
<b>Guidelines</b>							
<b>Time to Eat</b>		X					
<b>Nova Scotia Produce and Products</b>			X				
<b>Food Packaging and Environmental Consciousness</b>							X
<b>Role Models</b>						X	
<b>School Partnerships and Commitment</b>						X	

As outlined in the table above, the SFNP explicitly reflects the following FL multiliteracies: health in three of the directives, nutrition in seven of the directives, agri-food in one directive, information literacy in one directive, civics literacy in four directives and culture in one directive. Of the five guidelines, nutrition is reflected in one guideline, agri-food systems in one guideline, civics in two of the guidelines and eco-literacy is considered in one of the guidelines. It should also be noted that some directives

and guidelines have the potential to embrace additional literacies; this is a missed opportunity in the SFNP to incorporate a comprehensive FL approach.

#### **6.2.3.4 Nova Scotia Learning Outcomes Framework**

The Nova Scotia Learning Outcomes Framework, Primary - Grade 12 is the ‘curriculum policy’ by which teachers must adhere. I examined each level of school separately to determine how scaffolding of the FL multiliteracies were applied in the curriculum. Through deductive analysis, I examined the documents for explicit curriculum outcome statements related to my proposed *FL Conceptual Model*; only those subject areas that describe FL overtly are outlined in the sections below.

##### ***Elementary School***

Elementary schools in NS must include the following subjects in their curriculum: health education, information and communication technology, language arts, mathematics, music, physical education, social studies, science and visual arts. The curricula were reconfigured in 2015 to support an integrated approach to learning. Of the nine subject areas, four subjects comprised of the FL multiliteracies (Table 14). Of particular interest, Grade 2 Health Education is the only subject area and grade level that did not encompass any of the FL components. None of the grade levels embraced cultural literacy explicitly as it related to FL in the Health Education learning outcomes. Physical Education includes health literacy as it relates to food in Primary and Grade 1 only; no other literacies are covered in this subject area or grade levels. Science includes, within reason, all FL multiliteracies excluding media and culture, whereas Social Studies comprised culture, civics and eco-literacy. It is evident that all FL components are relatively incorporated throughout elementary school and this group of four courses connect the FL multiliteracies to some degree.

*Table 14. Taxonomy of Literacies Identified in the Nova Scotia Learning Outcomes Framework: Grades Primary - 6*

Subject	Grade Level	Literacy Areas						
		Health	Nutrition	Agri-food	Media	Culture	Civics	Eco-literacy
<b>Health Education</b>	Primary	X	X					
	Grade 1	X	X					
	Grade 2							
	Grade 3	X	X	X	X			
	Grade 4	X			X			X
	Grade 5	X	X		X			
	Grade 6	X	X		X		X	
<b>Physical Education</b>	Primary	X						
	Grade 1	X						
	Grade 2							
	Grade 3							
	Grade 4							
	Grade 5							
	Grade 6							
<b>Science</b>	Primary			X				
	Grade 1							X
	Grade 2			X				X
	Grade 3			X				X
	Grade 4			X				X
	Grade 5	X	X					X
	Grade 6						X	X
<b>Social Studies</b>	Primary					X	X	
	Grade 1					X	X	X
	Grade 2					X	X	X
	Grade 3						X	
	Grade 4					X	X	
	Grade 5						X	
	Grade 6					X	X	X

**Junior High School**

In Grade 7-9, English language arts; French, Gaelic, or Mi'kmaw; healthy living; mathematics; physical education; science; social studies; and **two** of the arts education, family studies, or technology education are required. It is also expected that students take at least **one** of the following electives: family studies, music, technology education, or

visual arts. Four subjects in Grade 7 and five subjects in Grades 8 and 9 comprised of the FL multiliteracies (Table 15).

*Table 15. Taxonomy of Literacies Identified in the Nova Scotia Learning Outcomes Framework: Grade 7-9*

Subject	Grade Level	Health	Nutrition	Agri-food	Media	Culture	Civics	Eco-literacy
<b>Healthy Living</b>	Grade 7	X	X					
	Grade 8	X	X					
	Grade 9	X	X					
<b>Physical Education</b>	Grade 7		X					
	Grade 8	X						
	Grade 9							
<b>Science</b>	Grade 7							X
	Grade 8	X						X
	Grade 9	X					X	
<b>Social Studies</b>	Grade 7						X	
	Grade 8					X	X	X
	Grade 9					X	X	
<b>Food and Nutrition</b>	Grade 8	X	X	X	X	X	X	X
<b>Child Studies</b>	Grade 9	X	X					

Healthy Living (Grade 7-9) and Child Studies (Grade 9) both addressed health and nutrition; Physical Education included nutrition (Grade 8) and health (Grade 9) but none of the FL components in Grade 9; Science comprised of health (Grade 8 and 9), civics (Grade 9), and eco-literacy (Grade 7 and 8); Social studies included culture (Grade 8 and 9), civics (Grade 7-9), and eco-literacy (Grade 8). The only subject area that included all FL multiliteracies was Food and Nutrition (Grade 8). According to Piaget’s stages of development, students in earlier grades may benefit from the course being offered sooner.

### ***High School***

Students must complete 18 credits to graduate high school in NS, for which there are 25 subjects to choose from in Grade 10; 44 options in Grade 11; and 48 options in Grade 12. Of these subject areas, there are few courses whose curricula specifically mention FL components, such as nutrition, agriculture, civics, and environment to name a few; seven course options in Grade 10; ten course options in Grade 11; and six course options in Grade 12 explicitly declare FL components (Table 16).

In Grade 10, four food related course options exist under the Family Studies program; all four course options under Family Studies (FS) comprise of culinary elements which align with the thinking of food and nutrition skills. Of these four course options, Food for Healthy Living includes elements of health, nutrition, culture and eco-literacy; International Foods includes nutrition, culture, civics and eco-literacy; Food Preparation and Service covers elements of health and nutrition while Food Technology considers nutrition, civics and eco-literacy. Despite many elements of FL being reflected in the Family Studies program; there is not one that overtly described agri-food or media literacy; nor are these literacies represented in the other Grade 10 courses. This is a clear gap in a comprehensive approach for FL learning. Geography considers elements of eco-literacy; Physical Education depicts health; while Science portrays elements of civics and eco-literacy.

**Table 16. Taxonomy of Literacies Identified in the Nova Scotia Learning Outcomes Framework: Grade 10-12**

Grade Level	Subject Area	Health	Nutrition	Agri-food	Media	Culture	Civics	Eco-literacy
<b>Grade 10</b>	FS: Food for Healthy Living	X	X			X		X
	FS: International Foods		X			X	X	X
	FS: Food Preparation and Service	X	X					
	FS: Food Technology		X				X	X
	Geography							X
	Physical Education	X						
	Science						X	X
<b>Grade 11</b>	Agriculture/Agri-food	X		X	X	X	X	X
	Biology/Advanced Biology	X	X	X		X	X	X
	Chemistry			X			X	X
	Child Studies	X	X			X	X	X
	Energy, Power, and Transportation Technology							X
	Fitness Leadership		X					
	Geography of Canada			X		X	X	X
	Oceans			X				X
	Physically Active Living	X	X				X	
	Yoga		X					
<b>Grade 12</b>	Biology	X						
	Food Science	X	X	X	X			
	Food Studies and Hospitality	X	X					
	Geology						X	X
	Global Geography					X	X	X
	Health and Human Services	X						

Subject areas in Grade 11 outlined the various FL components, however, only one course, Agri-food, reflected media literacy. In fact, this course included all literacies outlined in the *FL Conceptual Model* apart from nutrition. Biology was the other only course offered that highlighted all components of FL with the exception of one: media

literacy. Chemistry included agri-food, civics and eco-literacy; Child Studies included all multiliteracies apart from agri-food and media literacy; Energy, Power, and Transportation Technology included eco-literacy while Fitness Leadership and Yoga consists of nutrition literacy. Geography of Canada comprises of agri-food, culture, civics and eco-literacy whereas Oceans consists of agri-food and eco-literacy. In contrast, Physically Active Living comprises of health, nutrition and civics literacy. If these subject areas were all taken during the same school year, and a cross-curricula approach was chosen, students would be afforded a comprehensive learning approach to FL.

During Grade 12, the final year of school, the fundamental courses in relation to FL that are explicit in the curriculum documents include: Biology, Food Science, Food Studies and Hospitality, Geology, Global Geography, and Health and Human Services. Of these courses, Biology, Food Science, Food Studies and Hospitality, and Health and Human Services include elements health literacy; Food Science and Food Studies and Hospitality embrace aspects of nutrition literacy; Food Science is the only course offered in Grade 12 that encompasses agri-food and media literacy components; while Geology and Global Geography include qualities of civics and eco-literacy. It is also important to acknowledge that Global Geography is the only course to consider the element of culture as it relates to food. If Food Science and Global Geography aligned their curricula and students took these two course offerings the same year, a comprehensive approach to FL could be achieved for that academic year. It was surprising to me that these many courses were offered to provide FL knowledge, skills and experiences across the high school years, yet it seems not many students are FL.

## 6.4 Chapter Summary

The intention of this analysis was to respond to my research aims (*to explore the meaning and components of FL*) by mapping the multiple data sources into the original proposed categories of my proposed *FL Conceptual Model*, with the objective of refocusing the understanding of FL to be interdisciplinary. In attempting to be as comprehensive yet as succinct as possible, this analysis resulted in corroborating the multiliteracy components of FL. Furthermore, this analysis demonstrates that certain literacies are perceived as more important than others. Although the purpose of this analysis was not to list the key attributes for each component, some were identified throughout this inquiry; nonetheless, this analysis has demonstrated there are gaps in the scaffolding approach to FL in schools.



## CHAPTER 7: SOCIO-CULTURAL CONTEXT OF FOOD LITERACY

The dimensions of FL that were tested for and confirmed in Chapter Six provide the basis for examining the remainder of the findings. This chapter will describe my inductive findings and subsequent themes. As a reminder, I inductively coded data against the study participants' interviews by way of thematic analysis. Patterns appeared through repeated analysis of the teacher and parent interviews and through identification of overlapping codes through constant comparisons; specific themes were then devised to represent categories of interrelated data. Subsequently, I compiled findings from my multiple data sources (interviews, document review, and field notes) and my deductive findings outlined in Chapter Six, using an iterative process to organize themes seeking to understand the socio-cultural factors and forces in communicating FL in schools. Compiling findings from multiple data sources also acts a method of triangulation.

When the thematic data were mapped to my theoretical model (described in Chapter Four), the qualitative data generated in this study resulted in four overarching themes (see Table 17). This process allowed me to explore my remaining research aims of identifying: 3) existing FL *knowledge, skills, behaviours, values, attitudes, language and norms*, 4) FL *events and practices*, and 5) *barriers and enablers* that affect FL.

*Table 17. Themes and Sub-themes Identified in Socio-cultural Context of Food Literacy*

Theme	Sub-theme
<p><b>1. Complexity of Capitalism and Regulation</b> The global, national, and provincial factors and forces within the broader environment</p>	<p><b>Political-economic environment:</b> the role of government and the economic system and how they influence each other</p> <ul style="list-style-type: none"> <li>• Food governance</li> <li>• Corporate food industry</li> </ul> <hr/> <p><b>Physical environment:</b> encompasses what is inside and surrounding the school building</p> <ul style="list-style-type: none"> <li>• School infrastructure</li> <li>• Proximity to outside community food environment</li> </ul>
<p><b>2. Nexus of Social Practice</b> The interrelationships of organizational and group networks on socio-cultural norms</p>	<p><b>Social environment:</b> cultural and structural elements organized into social influences</p> <ul style="list-style-type: none"> <li>• Social structure</li> <li>• Unique level of schools</li> </ul> <hr/> <p><b>Partnerships and Community:</b> shared responsibility in connecting food related activities within or outside school</p> <ul style="list-style-type: none"> <li>• Community involvement</li> <li>• Family engagement</li> </ul>
<p><b>3. Intricacies in the Value of Food</b> The beliefs, knowledge, skills, attitudes, preferences, and behaviours that influence choices.</p>	<p><b>Expressive culture:</b> categories of processes, beliefs, behaviours and norms</p> <ul style="list-style-type: none"> <li>• Formal instruction</li> <li>• Role modeling</li> </ul> <hr/> <p><b>Hidden curriculum:</b> unstated norms, values, and beliefs that are transmitted to students through social conditioning</p> <ul style="list-style-type: none"> <li>• Events and practices</li> <li>• Informal learning</li> </ul>
<p><b>4. Dichotomy of Two Cultures</b> The contradictions and tensions between teacher and parent cultures.</p>	<p><b>Disharmony and Tensions:</b> incongruence between philosophies, actions, and priorities</p> <ul style="list-style-type: none"> <li>• Roles of school vs home</li> <li>• Cost of quality vs time</li> <li>• Priority of food</li> <li>• Freedom and choice</li> </ul>

The first theme identified, *Complexity of Capitalism and Regulation*, aligns with the highest points in my theoretical framework: Macrosystem (global, national, and

provincial culture and environment) and Exosystem (community culture and environment). The second theme, *Nexus of Social Practice*, aligns with the center of the model: Mesosystem (organizational culture and social systems) and Microsystem (group culture). The third theme identified, *Intricacies with the Value of Food*, aligns with the lowest level of the model: Individual (values, attitudes, beliefs, and behaviours). The fourth theme identified, *Dichotomy of Two Cultures*, aligns with the reciprocal influences of each construct within the nested, multi-level framework. Correspondingly, it is worthwhile noting each theme has sub-themes that align with the pillars within a CSH approach.

## **7.1 Complexity of Capitalism and Regulation**

This theme relates to the factors and forces in the broader environment and aligns with the macro-, exo-, and meso-systems of Bronfenbrenner's ecological model. This theme is illustrated by means of the drivers within the existing political-economic environment as well as the physical environment influences. For the purpose of this thesis, each of the spheres of Bronfenbrenner's ecological model are integral to the development and implementation of FL policies, practices, and processes. The majority of participant interviews linked the political-economic and physical environment to the existing factors and forces, as well as what may be lacking, and offer suggestions as to how to better address these influences.

### **7.1.1 Political-economic environment**

Within the political-economic environment theme, two sub-themes emerged in relation to food governance and corporate food industry. These themes are parallel to the policy pillar within the CSH approach as most of the discussions were related to the

SFNP, and the associated policy implications. The SFNP was viewed as stimulating discussions on formal rules in the school that may or may not be followed whereas the corporate food industry discussions related to the actors and activities in the food system that were viewed as dictating profit-based principles.

### ***Food governance***

Governance is a natural social process that exists, whether formal or informal, by way of laws, policies, norms, power, or language; essentially governance is a process of ruling throughout society (Bevir, 2012). As such and through my analysis, a food governance structure has been identified that currently dominates FL policies, practices and processes in NS schools. Due to the nature of food being interdisciplinary and often fragmented, this study's research findings suggest the food governance agenda in NS intersects the spheres of Bronfenbrenner's ecological model, but it is disjointed and temporal. The relationships of the actors as well as events and practices often create both challenges and opportunities within the school food system and school food environment as described below. It is important to note that this food governance structure does not include the curriculum but may, in fact, shape it.

Interview data showed that both teachers and parents recognized the role of the federal government (macrosystem) in food governance. For example, T3 appreciated that the federal government had created a political approach to healthy eating but was unclear of the outcome *“Well I know that Health Canada announced a federal healthy eating strategy last year... I don't know what has come from that yet.”*

When discussing provincial policies, T7 realized the inherent power of the government by stating *“obviously the[federal] government... 'cause they're the ones that*

*publish the Canada's Food Guide, they would be one to influence that [policy]". P3 supported this by adding:*

*I think they could point to and make aware, there's the Canada Food Guide, they could try to adhere to that, promote that, or I'm not sure if any provinces have their own similar thing but not that I'm aware of. I don't know what they do with the Nova Scotia Food and Nutrition School Policy, I forget the exact name.*

Despite the role of the federal government, the key political driver related to school food in NS is the provincial government through the SFNP. Most teachers and parents acknowledged there is a policy but were unaware of the elements of the policy as T3 described *"you know the fact that I've not even heard of some of these, shows you how well the message is getting out from our board if that's what they're promoting. I've never heard some of these."* The fact that many of the participants were unaware of the elements within the SFNP is suggestive of ignorance, apathy, or dominant ideologies in the school system that are stifling the policy or pointing to undesirable nuances. To reinforce this assertion, P7 expressed *"I don't really know what the school food and nutrition policy is, except for those food bans."*

A thought-provoking perspective that came up throughout the interviews related to SFNP is that the political structure is designed in such a way that it is determined by rules related to economics. P1 perceived *"the school community itself is just a delivery environment"* by sharing the view that:

*schools are going to offer whatever the food and nutrition policy forces them to offer. I don't think, I don't think they really have the power to push back and say*

*no we're not doing this, this is too expensive. I think they just have to do it; you know if it's required, they do.*

P7 argued that the policy is symbolic in nature and was not sure of its overall value:

*I'm not sure the policy is all that important. It seems to be a document that as long as it sits somewhere and people don't actually read it then it doesn't make very much difference um, I don't know how binding this policy is, if it's just kind of a recommendation that you can do something about or not then, the value's very limited I think.*

Despite food being an important contributor to the economy (Government of Canada, 2018), and particularly in schools (Ashe & Sonnino, 2012), P4 reflected on the approach across the political system and considered that school boards are in a powerful position to create equity across and within schools:

*I think it would create better consistency right cause the board in theory I think would set up systems to ensure some consistency or equity or continuity or whatever you want to call it across the system and set the tone.*

Another consideration related to FL in the political-economic environment in schools is that it can manifest in contradictory and complex ways. Teachers and parents identified leadership as an essential aspect of the political climate that can dominate or determine the economic factors and forces; as T7 asserted “ *I would say [the] principal would be a big factor because they're kind of the ultimate decision maker and whether they see it as important or not then that would yah so the principal is definitely a huge factor.*” T3 reiterated this sentiment by stressing “ *it does make a difference how much the principal is a stickler for rules*”. Similarly, P6 shared:

*different principals have different ways of like perceiving rules and guidelines and ours at the time took it as kind of a 'I have to do this now or else' kind of thing and then because there were other schools in the area that were bringing it in more gradually or were kind of using their own, interpreting it more loosely it created a bit of animosity because you know a local school...was still offering chips and mini chocolate bars and things as rewards at their fair and we weren't allowed.*

Despite the regulatory process imparting rules from the level of the federal government to the provincial government to the school boards, P7 expressed how enforcing the rules may perpetuate some additional challenges:

*I think enforcement would maybe be going the wrong way because then it's further, feeds this notion that...healthy eating is something you have to force yourself or somebody else has to force yourself to do. I think that would probably be counter-productive and only cement this attitude.*

In contrast, P8 asserted that the province should be enforcing the policy and paying more attention to the social interests and ideologies of parents:

*so if the Department of Education is serious about this and this is why they provide it and it's important, so it would make me more diligent about making sure that the school is following the policy and about informing other parents about the policy and to make them more aware so that they can put pressure on the school as well to follow it.*

Meanwhile, T1 argued that if the SFNP was enforced, schools may not conform:

*it's all negative in context and then it's sort of you have to start going underhanded, below the radar, you know if you want to get anything by them... which is unfortunate.*

### ***Corporate Food Industry***

Given the dominant nature of the food governance agenda, it is also important to acknowledge that the corporate food industry (macro-system) plays a significant role within the broader food system. The corporate food industry has an economic and ideological agenda which impacts food policies and approaches inside and outside of schools and ultimately, influences societal consciousness (Nestle, 2013), as outlined below.

Teachers and parents identified media influences as key drivers of food choice; T3 suggested that *“the society we live in...the advertising is everywhere. We may take them [students] away from the advertising while they're on campus but it's prevalent”* while P8 noted the influence from corporate food industry but urged that government should be involved to combat the impacts:

*I think, you know there's so much influence from advertising, corporations, it's hard to, it's hard for kids to ignore that. As to who else can influence it positively, I mean I think government leaders need to be more outspoken about the importance of this from a public health perspective.*

Meanwhile, the cost of food merits additional attention as both parents and teachers raised this issue often. The global corporate food industry is the dominant force in determining food costs which creates a challenge for those living with lower socio-



economic status to access food (Weiler et al., 2015). As a result, and as discussed in Chapter Two, the lower nutritional quality foods are often of less cost as P1 described:

*I've thought many times about people that are on limited incomes and try to keep cost of lunches relatively inexpensive, fruit and vegetables...even if you buy apples and bananas and all that stuff it is expensive. It's cheaper to buy a box of granola bars than it is to buy half a dozen apples.*

P1 elaborated further by stating:

*everybody wants to believe that, you know kids... why are they bringing bags of chips to school and cans of pop and you know Gatorade when they're just not, they're not even actually needing any of that stuff, but sometimes, you know, it's the cost of, sometimes it's just the cost of eating healthy.*

P3 presented a similar argument:

*I know that a lot of family's resort to unhealthy food choices simply because...it's just so expensive to eat healthy...I think the cost of food has gone up faster than other things and I really notice that as an adult. I'm always, to this day I'm shocked at how expensive grocery bills are.*

T2 recognized food security as a key issue by explaining how the affordability of vegetables and fruits are a concern:

*I also have worked with kids of so many different socio-economic status, various backgrounds and there's so many different factors that come into play... Food security is a huge issue and fresh fruits and vegetables for some people is just not an option all the time.*

To support this statement, T5 expressed the view that healthy eating can be challenging since food prices fluctuate depending on the time of year, and are determined by the corporate food industry,

*I want to promote healthy eating and you know groceries are kind of expensive and sometimes fresh fruits and vegetables aren't always able to be purchased depending on the time of year, like sometimes cauliflower is like eight dollars”*

From another perspective, the economics of food is not the sole factor in the corporate food industry hegemony. Teachers and parents recognized that the ideologies across low and high socio-economic status have become comparable with regards to convenience. T3 presented the case of another school with lower socio-economic status compared to the new school she worked in, which is more affluent, but each had similar challenges, *“like if it's about food there's not that much difference. I mean it was worse at [old school] but there's still a lot of, it's still a lot of crappy food at my new school too.”* P7 asserted that their neighborhood had both high and low socio-economic status and that *“...some people are maybe just used to possibly going the cheap and convenient route at home”* given the schedules they hold. P1 emphasized time-scarcity as an issue and supported this statement by sharing:

*I mean I don't want to stuff their lunches with bought granola bars and those Special-K bars and all those treats and stuff, but you know you have to because unless you've got time to be doing homemade food all the time... you try to buy things at the grocery store that are healthy but not overly expensive.*

Additionally, P6 expressed the view that being busy impacted quality food choices,

*one thing that I firmly believe in is that sitting around a table and taking time to eat supper is a time to kind of learn about food and model healthy eating and a lot of extracurricular activities are booked at supper time and so it's really challenging as a parent to have that sit down meal as a routine and I think that has a negative impact on healthy eating and so yah that kind of grab and go culture not putting enough thought and time and preparation into what you're eating.*

Meanwhile, schools may enter into arrangements with food industry that may promote commercial interests (Sharma, Teret, & Brownell, 2010), such as achieving their bottom line over health. Most teachers discuss the cost of food in relation to the school cafeteria. T1 reflected that *"I think for the most part the cafeteria adheres to that[policy] but they also... [are] in the business of making money, making a profit...Because like I said they're in the business of making money, they're not making great food."* T2 recognized that the profit margin often drives the decisions for what foods to serve in the cafeteria:

*I know that discussions in the last couple of years, talking with people before the cafeteria got really good, a lot of the ladies in the cafeteria would just give the kids what the kids asked for. So, if there's high demand from students for certain items, then they supplied it. Which really took away from the nutrition policy.*

while T4 emphasized *"I mean schools don't have a lot of funding for super healthy lunch choices because the priority too is keeping the costs down."* T2 also deliberated on the challenges of the school cafeteria delivering healthy food options when up against corporate food industry,

*I think the other thing that contributes to unhealthy environment is that a lot of the cafeteria employees were trying to keep students in the school to eat. So, in order for the cafeteria to make more money, they were trying to serve food that was similar to the food that the students were going out and getting. So [Fast Food Chain], [Different Fast Food Chain], all that kind of stuff. So, I would say that there's pressure to be like the food that the students would get, your pizza, your fries, and all that crap.*

### **7.1.2 Physical environment**

The physical environment also presented two sub-themes related to school infrastructure and proximity to outside food sources. The school infrastructure considers what is available in and around the school (exo- and meso-system) that may reinforce or weaken messages whereas the proximity to outside food (exo-system) refers to access to the food sources surrounding the school.

#### ***School infrastructure***

The school infrastructure connects what is available in terms of the time and space provided for eating occasions to social relations in schools. Most parents discussed the challenges related to lack of space and equipment related to eating locations in the school and raised concerns related to timing of eating. Some parents considered lack of cafeteria space a significant resource challenge, with P1 noting:

*I think it's just the actual architecture of the building. I think some buildings, some schools have an easier job than others because they have more to work with, they may have the actual cafeteria space or there's some that are, you know the kids have to eat in the gym and if the gym is busy they have to eat in the hall*

*and so I think the schools that have the space certainly you know they're taking advantage of it and yes it does make it easier for them to offer an environment that is more conducive to relaxing and eating and taking time to do that during the day.*

In contrast, P2 perceived the lack of space as an opportunity for schools to bring in foods from outside of the school,

*there's not a regular food service at the school. There's not like a hot lunch program every day. There's not a cafeteria or anything like that. They bring in hot meals to the schools on Wednesday's and Fridays, and they also bring in pizza on Thursdays. So, you could purchase meals from the school those days of the week.*

The school day structure also emerged as an important factor related to the physical environment. Many teachers and parents discussed eating as a regulated practice that create patterns of socialization and symbolic power, such as eating at the same time each day regardless of hunger cues and the symbolic power of schools to dictate school mealtimes. P1 shared concerns with the schools not considering individual needs related to hunger:

*...the timing of the day seems to really take priority over letting kids eat. They're not allowed to eat in the classroom, they can't eat in the hallways, they can't you know there's just so much, it's just so controlled, the environment is so controlled... it's a nuisance to the school culture, it's disruptive, it's you know it's something that, it's only done at a certain time of day. You know you do it here and you do it here and these are the only times you eat. So, I think the whole*

*culture is just so backwards. I think that's a big, big part of the problem, that eating is something that you know you just, you do it because, we allow them time to eat because we have to not because they need to eat at different periods throughout the day. You are only allowed to be hungry here and here and then you have this much time to do it. So, don't bring anything too complicated to eat because you won't have time.*

P4 supported this viewpoint and shared:

*From my perspective, I think that culture around food is that it's not that important. It's one of those pieces of the day you just get through to make the rest of the day go smoothly and I think again, not having time to eat is a symptom of that not having a healthier menu or good staff at the cafeteria is part of that as well. Yah so I think the culture is maybe not valued as much as it maybe could or should be.*

Furthermore, T2's view coincided with this perspective when raising the issue of regulation around food:

*I strongly disagree with the fact that a lot of teachers don't let their students eat in class. I think when you're hungry you should eat and when you're thirsty you should drink. I think you need to listen to your body, and we're taught not to in school which is very robotic and it's not natural and I don't like that.*

This research has found that available food offerings in school and timing of eating occasions in school have been described by participants as having an influence on how, what and when students/children eat. As a consequence of some of the school infrastructure challenges, older students often go off school premises to eat.

### ***Proximity to outside food sources***

Access to food sources outside of the school environment (exo-system) demonstrates many challenges for the school's physical environment as well. It illustrates corporate food industry's power over the school structure via clustering of fast food retailers close to school premises (Mozaffarian, Angell, Lang, & Rivera, 2018). T7 discussed the many food options outside school and how students in junior high grades could exercise their freedom to access such places,

*Something that I see, especially in junior high so when through elementary school kids are not allowed to leave the school grounds, but when they kids get to junior high they're able to leave the school grounds and with their parents' permission so those kids that leave the school grounds, they have this insane sense of freedom although it's you know they can only get, wherever they can get in 45 minutes but that gives them kind of access to those places outside of the school where the choices are far more vast than what they have at school so I guess trying, so I've had kids come back from lunch with 2 litre bottles of pop because they're cheaper than a can of apple juice, or a bottle of water at the school or anywhere else. So, I think that access to outside places is also a preventative kind of measure for the school to promote healthy eating.*

T9 raised concerns about students in junior high schools accessing outside food sources and glamorizing having food delivered to the school,

*I think that's something else that we all need to increase and be more aware of because...we notice that as the year continued students were ordering food from outside of the school to be delivered to the school and that was something that we*

*had never experienced, I've been here four years, we'd never experienced before, so then that kind of romanticizes those other options and so we're seeing students moving towards you know the pizza that's delivered or having a high school that's nearby, students that are able to drive, their options you know we no longer have that, you know older brothers and sisters of our students are now bringing them food from those places that they can now access because they have the ability to drive or they have a longer lunch so they can walk and get something.*

T1 spoke about how easily high school students could access outside foods, despite having a cafeteria, given they are often adjacent to the school premises, by declaring “*they can go next door to the stadium and get whatever they want. [Sandwich Chain] is close by too but then a lot of them have cars so they can go*”. On the other hand, P5 reflected on the only other option, besides prepared lunches, for students in their school is to go offsite since there was no cafeteria or food programs:

*This school doesn't even have a cafeteria, it doesn't have any type of food programs for their lunch or milk programs or anything like that in this school...being in a school where there is no cafeteria, their only other option is to go to the mall right...across the street from their school where everything is cheap but nothing is healthy.*

## **7.2 Nexus of Social Practices**

Social practices are defined as “patterns of behavior that enable us to coordinate due to learned skills and locally transmitted information, in response to resources, and whose performances are ‘mutually accountable’ by reference to shared cultural schemas/social meanings” (Haslanger, 2017, p. 4). This theme of the convergence of



social practices is central to CSH cultural values and practices as well as inter-social systems and influences that are promoted by community, schools, teachers, and peers that may communicate hidden messages. This theme aligns with the meso-and microsystems of Bronfenbrenner's ecological model (1979) with sub-themes that are associated with the social environment and community and partnership pillars of CSH.

### **7.2.1 Social environment**

The social environment consists of the socio-cultural aspects (micro-system) and social organization (meso-system) within and around the school community. The social structure and unique level of schools are predominantly discussed when considering the social environment.

#### ***Social structure***

The social structure relates to the socio-cultural aspects within the schools. Each factor shapes policies which, in turn, may influence events and practices and thus strengthen or weaken the act of consumerism (i.e., what students are bringing in to the classroom) in schools. Parents disclosed school support as a very important factor with regards to the social aspects in school, as P5 described:

*your teachers and your principals and your vice-principals and everyone in your school are the parents to your children during the day. I think that teachers and principals and such have a lot of say and a lot of I think I guess it's hard too, because it's their lunch hour too right so I don't know but the parenting is on them during the day and I find that it's... just easier for them to kind of put things aside and just send them [students] off on their way than it would be to have teachers run different programs.*

Parents also revealed the broader societal ideologies penetrating the social aspects of school when you “*celebrate special occasions with more indulgent foods*” as P2 acknowledged. At the same time, T4 discussed the challenges of students preferring treat foods by stating “*if you have a kid who brings in like a [Bulk Grocery Store] size bag of chips, everyone wants that*”. Instead of food as pleasure for special occasions narrative, P2 also expressed the view that treats are becoming the norm:

*there is more of a movement toward healthy eating and valuing healthy food especially for young children, but then there is this kind of counterbalance but like oh this is a special occasion, and this is a special treat, and it's just when the special treats become everyday things.*

Despite the inference toward a healthy eating movement, P3 noted there was some sense of embarrassment when choosing healthy foods in schools and suggests,

*promoting it to the point where kids will feel like if they eat healthy it's not out of the ordinary do you know what I mean? So, there's no stigma attached to like bringing a really healthy lunch you know or kids won't feel like if they bring a really healthy lunch with no junk food, there won't be any stigma.*

On the other hand, teachers presented the argument that students were creating a social environment to support their position in the school or classroom; T3 illustrated this view by sharing the following:

*so we do this thing in my class where they get, they're divided into groups and they get pompoms when they're doing academic things that you know like if they're all ready to go they get their table gets a pompom or something, so they compete for these pompoms...but he was trading, he was giving people candy to*

*get pompoms to add it to his own team's bucket...his parents were sending him with you know like seven or eight treats so he had lots of extras to share around.*

Finally, some teachers and parents speculated that eating takes away from socialization with friends and this reflected on student choices, as T9 emphasized:

*I'm finding that even the choices that students are making are the quick choices because they're viewing, I think they view eating as a take-away from the socialization time, am I making sense? Like the longer they eat, the less time they have to be on their cell phones or play soccer outside or catch up with friends and so that really drives them.*

### ***Unique level of schools***

The unique levels of school were discussed by both teachers and parents as distinct and requiring different approaches to the school food environment. T1 indicated that *“high school needs to be considered different than certainly elementary schools and junior high schools...in the elementary, middle and junior highs, yes we need to help them with those positive choices”*. T1 recognized that homemade healthy food options are offered in high school:

*I offer some things that wouldn't necessarily make it on the list of what's acceptable and what's not, but...it's a high school and things need to be treated differently here. But people, I think people would see that we offer good, like homemade food and...we don't have a deep fryer or anything like that,*

but asserted that high school students should have other options:

*As far as vending machine goes, we do have an option of baked chips...And some like 100% real jellies or whatever but high school kids aren't interested in that*

*and so we put in there, we do a mixture, we do that and we do the regular standard stuff like chocolate bars, regular chips and we feel that if you're in high school you should be able to make the decision if that's what you want and so that's why we provide it, that's why we do that.*

Parents appreciated that middle and junior high school students should be supported to have the healthy choice while in school. P5 explained:

*I definitely think that more needs to be done around the focus on keeping kids at school when they're supposed to be at school and in school and not you know off the school property at lunch every single day type thing, I find it was a little shocking. For a middle-aged school at least, I think high school is a little bit different but for kids that are you know grade 7 and grade 8 and grade 9 like that's when you're teaching them their skills going into high school and going into you know post-secondary, starting them off with bad habits is obviously not something that as parents we want to be doing.*

P6 presented another argument that middle school students should have some treats offered:

*...in our middle school even, they sneak a couple of things, like they offer Rice Krispies squares say, which aren't exactly on the policy, kind of to keep kids coming back, like at that middle school age right being a bit more flexible. Their main lunch is always healthy, homemade but they do offer some more little treat, like a little mini ice cream thing or some yah some kind of middle of the road snacks and I think that kind of keeps kids coming back.*

### 7.2.2 Community and partnerships

This section refers to the relationships between and within school, family, and community organizations as well as the challenges and opportunities these relationships present. This theme is illustrated through two sub-themes of community involvement and family engagement.

#### *Community involvement*

Parents and teachers deliberated on the challenges of partnering with outside community organizations (meso-system). P8 considered business donations from outside of school to be beneficial if they aligned with the SFNP, however, also ruminated about vending machine companies' corporate interests over health:

*it's really not that difficult to offer healthier choices. I mean they're not; you know it's not like at the school where there are vending machines and there's corporate interests. The only time there's anything like, I mean we're lucky that sometimes businesses will donate things but even then, I think it's easy enough to say here are the guidelines of what we're looking for in terms of donations.*

P1 examined the need for alignment between vending machine companies and cafeteria services:

*I think if they're partnering with companies that have vending machines, which I don't know if they still do in schools, I think they do, I think there are still some of them, whatever partnerships they have with those that would certainly be, that would influence, I think the company that they align with for their cafeteria services is obviously a big one.*

Comparably, T9 suggested that the cafeteria model should be integrated into the school model for better health and learning outcomes:

*They [food service workers] really need to be let in just so that even an awareness of their role within the school environment, I think we've had so much change because I mean they're the ones that are ultimately suggesting certain things and I don't think they realize that they are a part of the students' lives, I find that the model, the school model and the cafeteria model they're really viewed as separate entities.*

Some teachers discussed how outside organizations have been involved in schools, however, impacts of changing staff have had some undesirable influences on community involvement, as T2 reflected:

*we work with Public Health Nutrition, like Public Health Nutritionists came in...this is a few years ago, I can't even remember what it was, like this is so long ago that, like for example the Youth Health Center, we really should be paired up with and do stuff but just the person who organizes that stuff now really doesn't reach out to any other organizations and they don't do what should be done at the health center for sure. The person who used to be at the Youth Health Center was all about like health promotion and he would do a lot on nutrition education and post stuff around the school but that was probably eight or nine years ago. So, I think that all that stuff has a lot to do with who you have in place already in what organizations are brought in. Yah but as far as like our relationship or our continuous connection with outside organizations there's none that I know of. I mean we do like [Grocery Chain] we get our stuff for the breakfast program from*

*them so, but there's no like obvious marketing or anything like that. It is just a grocery store that helps us with our groceries, that kind of thing.*

In contrast, T5 shared how community support through funding had allowed her to purchase items to support FL practices in her classroom:

*I've received two of the PDAF grants which are like from, it's provided through the [teacher's] union and the Department of Education I think, and so they're up to \$5000 so one year I got one, I got an incubator and some iPads and stuff and that was to so I could hatch eggs and stuff in the classroom, and I talked about science and stuff and how we would make movies and stuff with the iPads and then my next one was for the mobile cooking cart, and so like so we could continue the gardening but you know to buy the induction cooktops and stuff so that was with that. And then I received one from I think it was like, like [Nearby Town] Community Health Board, yah so one of those and that was sort of along the same line.*

### ***Family engagement***

Family engagement (micro-system) in schools is a partnership, in and of itself. Parents discussed challenges while teachers shared the opportunities with and for family engagement. Parent participants shared the view that volunteering in school is a difficult process, as P4 described:

*the process to volunteer at the school is very cumbersome right like I think that the staff feel like they have to lead it whereas potentially there could be others willing to step up and lead at the community level but yah it's almost this controlled piece and again I don't know if that's coming from the board or if*

*that's something that's more localized but yah so I really think that you know parents are probably playing a role.*

Another challenge parent's revealed is the request teachers make to support school gardens during the summer months. However, P2 expressed that this is also as a great opportunity:

*We lived in the North End and... they did have a community garden. Which was really cool, it is a little unusual that or a little hard because, um, the main time of year when you tend the garden, the school's not on. So, I remember getting emails that would be like, you know, if you water the cucumbers you can have the cucumbers... And I think it's an awesome idea, but I also think there is some inherent challenges just with the timing of the school year.*

Within the school, parent volunteers were favored during the work to rule (labour dispute), and many stepped up since teachers could no longer support certain activities. P2 shared the issue with student supervision in her school that resulted in the need for parent volunteers:

*But if they [students] stay in their classroom, then there is a lot of supervisors required. Like it's a supervision issue I think and even more so now with the teachers, like for our school at least when they were on work to rule, we had parent volunteers helping supervise the lunch time.*

However, P4 presented an argument that despite “a spectrum of support amongst parents”, the school may obstruct community and family involvement:



*I sometimes get the sense though that the schools aren't necessarily as open to support from the broader community as, or that there's barriers to them doing that and welcoming more support or assistance.*

Conversely, some teachers truly valued the support parents provide. The old adage, many hands make light work, is the philosophy T5 revealed by noting that:

*And to have people to help you build the stuff and help out... this year I had a family garden clean-up day and I mean only five or six families came but we got it done, it was able to get done so, I know things, I'm kind of getting wiser like that, it's you know we can spread it out and just invite people and even if only five families show up, it's still five families that can still do a lot of work.*

### **7.3 Intricacies with the Value of Food**

This theme primarily relates to the knowledge, beliefs, values, attitudes, and symbols of the participants, families, and their social networks. It is worth noting that this theme connects with the micro- and macrosystems of Bronfenbrenner's ecological model. Furthermore, this theme has sub-themes that point to the expressive culture and hidden curriculum in schools which reinforces the teaching and learning pillar of CSH.

#### **7.3.1 Expressive culture**

The expressive culture conveys distinct ideological, cultural, or principled messages in an obvious manner. In school, this can be through both formal instruction and role modeling; both of which can deliver intentional and unintended messages.

##### ***Formal instruction***

Formal teaching and learning (instruction) is a mechanism of social practice. This process of education can teach critical thinking skills or it can reinforce prevalent social

norms; in this case the norms related to food. This section highlights participant perspectives related to formal instruction. Most teachers and parents discussed interactive FL approaches that were applied in formal instruction, such as field trips, taste tests, and increasing food skills. For example, P2 shared the following sentiment:

*So, I think making those options available, like I think, you know, like the kids going to the apple orchard. You know, when they think about that like yeah that's a good trip for the kids, like it's a good way for them to connect with their sense of the environment and healthy food and so on.*

T5 explained “*when they [students] make it [food] themselves and I always encourage them to give it a taste test and it's three little nibbles and I model what a little nibble is and...I line it with the curriculum.*” While another teacher, T9, spoke to the hands-on food skills students receive in family studies:

*we do have in grade 8, there is a food and nutrition component of family studies and so that is where that would happen so there are recipes that the teacher has developed and they do develop the skills cutting, measuring, cooking and they do taste the food that they create.*

However, some teachers and parents lamented that there were challenges with teaching and learning about food in school, specifically around nutrition education in the classroom, from teacher to teacher and school year to school year. T2 asserted that “*it depends on the teacher who teaches it, if they don't want to cover it, nobody's behind them checking their performance, which is frustrating*” while P6 reinforced this sentiment by stating that there are:

*differences between teachers so teachers still kind of, which is good, have the ability to implement it in their own way which I think is healthy in a way. But then you end up having a child changing from year to year so if the teachers got together and sort of collaboratively came up with some plans for the year that might help a bit...*

Some teachers and parents mentioned a cross-curricular approach, vertically and horizontally, in schools. T5 explained that elementary school is already working in a cross-curricular approach horizontally and that food is a rich tool for teaching:

*I would hope that it [food] would tie in that learning is everywhere, and across curriculum; right, our curriculum now for primary [to] lower elementaries, is cross-curricular so you know when we report on report cards it's integrated language arts and integrated math, we don't have science, social studies, health, and arts separated anymore so that is so you can have it flowing throughout the day sort of thing, your activities, so I think that's a good piece.*

T6 expressed the view that bringing food and mental and physical health together in the curriculum within and across different grade levels would be valuable, by commenting:

*in different grade levels, teachers are addressing in the different curricular outcomes, the provincial ones, about not only what we eat but how we live in terms of exercise and making good choices in our life, whether it's mental health or food or physical and I think joining the three together make it doable and it also gives everybody a better understanding of how they can make those great choices.*

T9 provided an example of how to engage students in critical thinking related to food by means of introducing the SFNP into the classroom discussions:

*so within my classroom, for example if we are having special events or having a class get-together like a potluck, we do talk about what are the healthier items that can be brought to the classroom and I will pull up the policy and explain kind of the rationale behind it and just kind of increasing a little bit of awareness.*

### **Role modeling**

The practice of role modeling is a powerful practice of teaching and learning through observed patterned activities. These observed behaviours are either intentionally or unintentionally incorporated into the beliefs and behaviours of students. Most teachers discussed role modeling behaviours in relation to eating healthy and drinking water in front of the students. T1 described:

*I always model eating healthy in front of the students, always and then because we run the breakfast and lunch programs we don't serve, like we stopped serving juice... the kids really like bagels so we do serve bagels and we serve fruit when it's donated or when we can afford it, which is often so there's usually like a bowl of fruit at the breakfast program too. We have lots of healthy cereal, so I usually only buy cereals that have like a significant amount of fiber and protein in them.*

T5 shared that she role models drinking water in front of the students:

*all the kids are allowed, not all kids do, but from the very first day they're allowed to keep a water bottle on their desk and then we talk about how important it is to hydrate your body and your muscles and stuff ...and I model that too, I'll go get*

*my water bottle and have, I'm going to have a drink right now, you know we'll have a little water break.*

T6 mentioned:

*trying to get teachers and myself to be a model of that when I'm out on the playground I'm typically eating bananas or fruit, and not walking around with maybe a little bar in my drawer that I eat at 7 o'clock until I get home, those kinds of things.*

In support of role modeling, T4 emphasized her classroom rules:

*Practice what you preach is a good one. Like have a fruit, like for me too I've always allowed my kids if they want to have a snack in class it's no problem but it has to be a healthy snack, so a piece of fruit, some vegetables, no pop, no chips, no candy, no chocolates in my classroom. And I'm not going to turn around and eat that myself in front of them.*

Only a few parents shared how they role modeled healthy food behaviours at home; P4 explained:

*I would say the biggest way that we probably do it is through role modelling. I tend to pack lunches for my children more so than purchase from our cafeteria cause I'm not exactly in favor of all the options that are there. I don't feel that they're as healthy as what I'm able to pack myself. So I think I support it again by role modelling, I think I also support it in sending again appropriate snacks for class parties or something like that, snacks that aren't you know, unhealthy.*

P6 expressed the approach taken at home as a philosophical one by which they role model healthy eating through connecting with food:

*And I think food can be a way to connect with kids and healthy eating is important but I myself choose connecting over forcing the healthy food cause I feel like in the long run them seeing me eat healthy and having that kind of frequent education piece and offer but not being forced to eat it will lead to them making healthier choices later in their life instead of having been forced to eat healthy, too healthy and kind of going to the extreme and then having them eat junk food later when they can. That's kind of my philosophy as a parent, I guess.*

However, P8 spoke of the lack of parental role modeling in society and advocated for the school to be the role model:

*I think the school should be a role model, they need to be a role model because in so many cases the parents aren't being role models and if the school, the schools are supposed to be preparing our kids to be independent members of society, then this is, nutrition is a really important part of that, and healthy eating habits are certainly important.*

T9 held a similar view that schools should be role modeling, and provided the example of the SFNP simply implying role modeling related to food should be in schools but it is not explicitly stated in the policy:

*even the role modeling of healthy food choices, it's implied in the policy but it's not overt and I think that it needs to be made, and whether or not that's different, if you look at elementary school, middle school, high school, I don't see why there would be too many differences but yah I think there's also a bit of a comfort in having the expectations outlined...*

### **7.3.2 Hidden curriculum**

The 'hidden curriculum' (events, practices, and informal learning opportunities) can either strengthen, or contradict, the formal curriculum, exposing ambiguities and inconsistencies between the school's taught and expressed ideologies versus what students actually experience and learn while they are in school (Neve & Collett, 2018). Two sub-themes that emerged related to hidden curriculum include events and practices and informal learning.

### ***Events and practices***

Food events and practices are symbolic communications of social relations. As such, food was often identified as a treasured tradition for events and practices, as described by teachers and parents. Therefore, associating food with events and practices was seen as symbolic of special occasions and in so doing, demonstrates its significant meaning. Many teachers and parents discussed fundraising events as historical, cultural, economic, and social, which includes the Spring Fling (cake walk), Santa's breakfast, and bake sales. P1 highlighted that:

*You know the spring fairs have already gone back to you know they barbeque hamburgers, they do the sucker pull, they do the cake walk, like they're still doing all that stuff, it's just you know they probably, maybe they hold back during the year doing any other big fundraisers that would involve things that would go against the policy.*

P2 did not think there were as many food-driven fundraisers at their school, as outlined below:

*I think our school doesn't have food driven fundraisers with the exception of things like the cake walk at the spring fair. Like they have a -don't sell chocolate*

*bars or cookies, or anything like that. Um, their fundraisers are actually, pretty much exclusively activity based. So, we have, like Breakfast for Santa, we have Spring Fair, and I mean those are full of unhealthy treats but at least it's contained to one.*

P2 also spoke to the deeply rooted fundraising mechanisms in the school related to student run canteens:

*the grade sixes, to fundraise for their end of year trip, the grade sixes though- at least after December, they have what they call Canteen every Thursday. So, you can bring a dollar and the grade sixes bring in, they must have different people assigned each week to bring in treats and they essentially sell them for morning snack for a dollar each.*

P8 further described recess food sales as overrun with sweet food offerings:

*one thing is when they'll have recess food sales and that's often done for specific classes or specific grades usually one of the four, five, or six will have, will sell food at recess and some of the things on offer are o.k. but it's always the sweeter things usually, usually the sweeter things or the salty things are the most popular.*

Despite this, T2 spoke to the SFNP not being required as there are only special events once in a while:

*we have like our Spring Fling or whatever we do a cake walk, we'll still do it. Yah, it happens seldom so I don't really feel like those policies have to really be put in place because it doesn't impact the eating behaviours of the students cause it's only once in a while, anyway.*



T6 stated safety concerns were of utmost concern in school, due to allergies, for special events:

*When we're having different kinds of events I make sure there are some healthy alternatives there, and also the other part to the food is making sure it's safe for all kids because we have kids with allergies, and not just to nuts but we have kids with severe allergies to eggs, and pineapple and all kinds of things, so that whole safety aspect too. It's not just making sure that we're following the policy about, it's like your health and safety, so we link into that.*

However, there were several classroom events and practices described by participants that seemed to ignore the issue of allergies such as food sharing during special occasions in classrooms. This was viewed as vexing at times when the parent is not in control, as P2 described:

*a child can bring in treats and share them with the class and as a parent you only find out about that afterwards, you know, like "oh we had cupcakes today because it was so and so's birthday" and um, I find that is what kind of - there is not very much control because you might of, even if you didn't mind having that, you might have altered what you sent for lunch.*

Some teachers acknowledged food sharing as a problem in the classroom, especially during special holidays. T5 spoke with other teachers in the school to advocate for change and reflected on the social transformation process:

*we decided to approach our principal and we explained the rationale and I explained you know kids don't need the extra junk; they're going to be getting it already. At Valentines they're getting it already, at Halloween they're getting it*

*already, Christmas time they're getting it already, can we make it a little bit more equitable. I said I can control the allergies a little bit better, and I can control what's being passed out and the quality of the food kind of thing.*

At the same time, T6 shared how *"We do have our ice cream social and that's part of our curriculum night. And we don't sell ice cream, it's just, we just have ice cream available. Just the little tiny cups"* suggesting this event was a social, cultural and historical tradition in the school.

Finally, T5 spoke about using food as a literacy event/practice in the classroom and how there are so many positive aspects to applying these skills, as illustrated below:

*when you think about... four and five year old;, their fine motor skills are developing just as you know older grades right everybody's on their own continuum, their fine motor skills are still developing, they can't be expected to sit all day long and pencil and paper work is, it's not the way I operate right. There is pencil and paperwork but not all day long. But when they're chopping and they're making scissor salsa that's developing their fine motor skills right? And in a very practical, useful way that is not where they're having to form the letter perfectly and have it on the line. Yes, they're supposed to be cutting their tomato you know and sometimes the chunks are really big but it's o.k. right everybody's practicing and same when they're chopping their apple and their strawberries it's supposed to be smaller and some kids cut it so small like it's this big whole mush and some kids it's quite large but they're practicing you know and then I'm sort of teaching them you know the group thing and then you pressing and then scissors right so there's lots of fine motor work involved in it.*

### ***Informal learning***

Informal learning are those social norms that are implicit in the classroom or the hallways of the school as well as passive learning at home. Some teachers and parents spoke about the home environment influencers such as parents purchasing groceries and children learning from this process. P1 asserted that:

*Sometimes it's that you know the economics of how families' homes are working, you know the kids are getting up and making their lunches on their own, the parents are gone to work, and you now they're just grabbing whatever's in the house. Whether it's what the parents want them to bring or not, but if that's stuff there that's what they're going to take. And sometimes people just don't know any better, they think that that's fine, they don't understand that you know if kids are having that stuff for lunch.*

However, an important concern that was raised during this discussion with teachers and parents relates to the contradictory messages that children often receive at school. P6 noted that:

*the things that they make in middle school at the cooking classes, it still tends to be like white flour, muffins or I don't know I'm not sure if that program has switched to following the nutrition policy. I think that would be a bit confusing for the kid.*

P7 shared a story about a former principal attending the class to discuss healthy eating but making cookies with the class, which did not align with the message:

*One thing that was kind of ironic was that at the end of the time when they were doing the curriculum driven talking about healthy eating, they invited a former*

*principal who's retired into the class that was two years ago I think, and they made cookies together. Chocolate chip cookies that even my son here, said he didn't like them because there was too much butter, too much sugar, too much of everything...sending mixed messages as sort of the end point of that.*

P7 expressed the view that:

*as far as actually teaching and what goes on in the classroom, I don't think that changes to the food and nutrition policy would change that but changes to the food and nutrition policy could affect all the things, all the other things that's around school,*

but then stated, *“outside the classroom always ends up in the classroom”*. In contrast, T9 held the position that not modelling healthy eating ends up inside the classroom and this informal learning is picked up by students, as outlined below:

*I'd like to say I have no hard data to support this, but I do want to say that the teachers modelling or sorry the teacher not modelling - “unhealthy” eating - I really do think that has an impact, to what extent I'm not sure. The reason I know that is because the one or two days where we forget, that's when the conversations happen and it's oh you had a doughnut for breakfast, why did you have a doughnut you know what I mean, like they, yes and so they are very aware or you know from a social studies perspective, using an example of coffee and their parents drink coffee and they'll say oh you know we saw a lot of teachers drinking coffee the other day and you know what's the point if it costs so little to make, why bother paying so much for it, it's just water, so they do pick up on those things so I do think that's part of it as well.*

Finally, T2 acknowledged the absence of the SFNP as a mechanism for informal learning; and suggested that if it were posted for the students, it may invoke critical thinking and questioning in order to make informed food decisions:

*it's [SFNP] not posted anywhere and it should be. Nowhere, it's not posted, it should be posted because then it gives, I feel like it gives the clients, who are the students, a little bit of ammunition to question because they should. Like they're old enough where they should be questioning stuff.*

#### **7.4 Dichotomy of Two Cultures**

When participants discussed the SFNP and food environment in and around schools, tensions between school and parental responsibility became clear. The majority of teacher and parent participants agreed that healthy food is important for student/child health and wellbeing; however, both teachers and parents felt limited in some capacity to effect positive changes. This overarching theme presented four sub-themes; first, roles of school (teacher) vs home (parent); second, cost of quality; third, priority of food; and finally, freedom of choice.

##### ***Role of school vs home***

The first sub-theme within the dichotomy of two cultures relates to the roles of school/teachers versus home/parents. Teachers and parents discuss their perceptions of the role of school and teachers versus that of home and parents with several tensions emerging throughout this discussion. Most teachers felt their role was to “educate”, although how this was perceived varied as described by teachers. T5 said “*I think that it's important you know to sort of set an example right and my role as an educator isn't just the academic subjects, it extends to everything*” suggesting informal learning was

just as important as formal instruction. However, T1 expressed the view that “we’re educators you know, we need to inform kids on proper choices, healthy choices but at the same time they need to be able to be given that, the choice to make that choice” alluding to a teacher’s role as providing knowledge but students ultimately having the agency to make individual decisions. On the other hand, T6 felt the role of an educator was to be supportive:

*I think you know the only negative thing that I kind of see is sometimes teachers start saying [to] kids about what’s in their lunch bucket and we have to be very careful about that because that’s not the role of teacher. It’s to educate and to support.*

Interestingly, the role of broader society was exposed as competing with educators and parents, although not usually consciously by the teacher and parent participants. There were moments of contradiction as illustrated by T8:

*I don’t think it [broader environment] can prevent the school from it [healthy school environment] but I do think that it encourages kids and parents to be picking up like fast food, there are some parents who stop by the school instead of sending their kid with a packed lunch, then they will run to McDonald’s and bring them that as a hot lunch but again those are usually the families who can’t afford to have the stuff at home to package a good healthy lunch in the morning.*

P8 presented the argument that people were not conscious about the power of the broader society, especially when it comes to treat foods:

*it’s a free society and let parents decide whether kids can have these things or not and for a lot of families it’s just normal, they don’t even think of it, one way or the*

*other, they only think you know our family, some of our friends are probably in the minority when it comes to being so conscious about what and how much of certain kinds of treat foods our kids are eating. So, it's society at large is not as concerned about it as they should be.*

Likewise, T7 spoke about the role of family in defining a 'treat', implying that the societal ideologies that have been created by food industry are powerful. T7 said:

*one of the conversations that we've had, you know how often is it o.k. to have like a treat or unhealthy meal and in all homes, in all I guess all students, see it differently. So one you know one said he might have a Timbit every day, another kid might have you know go to [Fast Food Chain] once a week, like or once a month, like they all, their perspective on that sort of thing is... so I think like families also are a factor.*

Alternatively, some parents saw their role as the main educator related to healthy foods.

P5 stressed how:

*I think it's just really you know parents have to take their role in parenting and have to take their role of being the person in charge and being the person to teach their kids and to train their kids to enjoy healthy eating.*

Furthermore, some teachers and parents explicitly communicated tensions that exist about roles and expectations among schools/teachers and home/parents. T4 asserted:

*I think it all comes down to the education at home, it's such a barrier I find. I mean the parents are the biggest influence on our, especially the small kids, cause I mean until they get to a point where they're independently able to make those*

*food choices themselves and independently become active, if they don't have it at home it's really hard to do at a young age.*

T3 voiced criticism towards parental influences in the school:

*we just went through work to rule and the teachers told the principal flat out we don't want lunches in our school anymore... the principal was so desperate for that money and to keep the parents happy that he worked out a way to do it that teachers would no longer be involved but before work to rule we had to collect the money, count the money, hand in the forms, we had to hand out the lunches, which is, it's like half the kids in the class get the lunch and you know there's always something that goes wrong, somebody ordered turkey and there's only vegetarian left and what do you do? Yah so you deal, you spend half of your lunch hour doing that so we said no more lunches, it takes up too much of our time...but the parents really wanted it and so there was pressure from the parents, and of course he's not opposed to it because he wants the money for the school.*

T2 described parental practices at home in terms of socialization having the most impact on students and once they are formed at home, there is not much the school can do:

*I think when it comes down to it all and it's their values and the behaviours they see at home cause once they establish those habits they're really hard to change. I think that's huge so I think that the school system provides a fraction of what the needs are and I think that whatever happens in school doesn't necessarily change somebody's behaviour.*

Conversely, some parents saw the school as playing a larger role in creating a supportive food environment for children. P8 specified:



*I think the administration part of it is that they interpret the policy more loosely than I would, than I do. And I understand, there is some that is vague but I think we, we differ on the spirit of the policy. So there's been, yah I mean there's some disagreement there. And again, it comes back to oh well it's just once in a while and my argument is that it's not once in a while, it's a lot, there always seems to be something for which there are, there's sugar being handed around.*

P6 had the same opinion and shared that:

*it's a challenge I guess as a parent, there's a lot of parents that send really, really junky food and it's almost like you're competing with that cause the kids see it and they want it and that's something harder to control...but that's a tricky one as a parent.*

### ***Cost of quality***

The second sub-theme under the dichotomy of two cultures was the cost of quality in relation to food communicated by parents. The predominant discourse related to cost of quality is the notion of time (or lack of), the use of convenience foods, and cost of food. P1 spoke about the challenge of time-scarcity and how this impacted meals at home and at school:

*just from a personal perspective, you know my kids are all really active in sports and stuff so I try to send healthy foods with them to school for their lunches and recess snacks, being mindful that you know they don't have a lot of time, that's part of the problem with them getting enough food during the day at school is that the school timeline is really tight so they don't always have enough time to eat*

*probably what's the best for them in some way, so I just try to pack what they can eat quickly.*

Another parent, P4, suggested time pressures due to family activities was setting families up to purchase convenience foods:

*I think it's maybe a symptom of what families are eating now as well right, like families turn to a lot of convenience foods now because of the time pressures they're under and kids are in extracurricular activities and the family meal seems to be the thing that's gone from the list of priorities. So yah I think that that societal shift is part of it as well. I think everybody knows they should eat healthier, it's not a secret what foods are healthy and what foods aren't, but pulling that off in your day-to-day life is another story.*

P2 shared the same sentiment, saying:

*I don't want to stuff their lunches with bought granola bars and those Special-K bars and all those treats and stuff, but you know you have to because unless you've got time to be doing homemade food all the time and you try to buy things at the grocery store that are healthy but not overly expensive.*

Another perspective that was shared was of eating healthy being less expensive if providing a packed lunch versus purchasing hot foods at school, which may be more convenient with limited time. P2 highlighted this by noting:

*I don't think it would be the expense because if you were really concerned about health, it would probably be healthier for you to just pack your own lunch which would also be cheaper. So, in that case the healthier option is the cheaper option.*

*So, I think you're going more for convenience when you go with the hot lunch program.*

The cost of convenience foods came up frequently and P5 spoke to the inherent challenges of time versus money when it comes to preparing foods:

*I think budgeting for anyone regardless of your family size you know is an issue and it's a lot easier to whether it be grocery shopping or making dinner for your family or school lunches for your kids, it's easier and cheaper for your household to buy those you know pre-packaged junk foods and the pre-packaged chips and to just pop in your kids' lunches and quicker too than it is to be healthy. I find that a lot of families these days and a lot of kids these days really just don't have, whether it be the time to find good produce or to go out and like our family we go to different farms to get our produce and farm markets in general but you know it's easier and cheaper for people to just pick the pre-packaged things and in school that's the same.*

Another perspective that was shared related to cost of quality in terms of defining a treat food with respect to special occasions. P2 discussed issues of treat foods being offered as everyday foods and contemplated the idea of what is a treat food:

*I think people are sending healthy lunches with their kids, the kids are eating their healthy lunches, from what I've seen. But, it's all these "oh it's a special occasion so we're having cupcakes. It's a special occasion so we're having popsicles or whatever" and you might be able to say it's a special occasion so we're having watermelon. I don't know maybe we need to think about what are those healthy foods that are perceived as special.*

The cost of quality also related to pressure to conform, which is a social influence. P6 emphasized, whether it was real or perceived, how the pressure of social norms can affect the quality food choices offered:

*I find the social pressure at school for children to kind of feel safe and fit in and the rushed environment, like it makes it tricky to send the healthiest choices for lunch but I did, I mean it is the best way to send healthy food with your own students. But I find as a parent it's not always easy, it's not always the most popular choice, or it doesn't get eaten.*

### ***Priority of food***

The third theme in the dichotomy of two cultures' overarching theme, was the priority of food as it relates to time to eat in the school. Most teachers and parents interviewed acknowledged this as an issue. In terms of lack of priority of food at home, it relates back to the issue of convenience foods and competing priorities (namely time). P6 explained that:

*one thing that I firmly believe in is that sitting around a table and taking time to eat supper is a time to kind of learn about food and model healthy eating and a lot of extracurricular activities are booked at supper time and so it's really challenging as a parent to have that sit down meal as a routine and I think that has a negative impact on healthy eating and so yah that kind of grab and go culture not putting enough thought and time and preparation into what you're eating.*

Alternatively, in school, T2 described a literacy approach in the classroom to discuss the significance of food in other countries and how the students are in astonishment with the time that students are permitted in other countries to eat:

*as far as like just time to eat, students don't have a lot of time. I know in other boards and other schools and other countries, cause we watched that documentary called Where To Invade, we watched that in school and the students, one thing they say is they can't believe in other countries that people have an hour and a half for lunch and you know that kind of thing but ...like I don't feel like that's ever going to change.*

Given the school day is organized around time to eat, one may think this is contradictory; however, P1 conveyed the inherent challenges with 'limited' time to eat and stated eating lacks importance in the day due to other social pressures:

*They have half an hour to get out of their classroom, go to their locker, get their lunch bag, go down the cafeteria, open up, eat their food, clean everything up, maybe get ten minutes outside or in the gym or whatever, and then they're back in their classroom, so it's not a very relaxing experience, it becomes a utility, it's you know o.k. I've got ten minutes to wolf all this food down, you know and you know they want to talk and that's the only time during the day that they get to talk and hang out with their friends, so you know food just becomes very, it just becomes something that's just so secondary.*

Finally, P4 presented an argument that food is not a priority in school as there is not a strong enough investment in it, by insisting:

*I think that you know there needs to be a greater investment in this and I think it's separate, I think it's viewed as a separate thing and not something that contributes to the learning environment, but it does hugely. So, I think like it or not, money, the money is attached to something, that speaks to its value and so I think that the fact that these things are not funded is an indicator that they're not valued.*

### ***Freedom of choice***

The final sub-theme related to dichotomy of two cultures is the notion of freedom of choice for children which is influenced by social, cultural, and environmental factors and grounded in larger societal norms. However, teachers and parents spoke of 'control' and 'choice' when it comes to food decisions. Some participants suggest unhealthy food choices should be the default in the school setting while others opposed this view and suggested healthy food choices should be the effortless choice. T1 presented an argument that in high school, if healthy food options were the only offerings, then students do not have a choice and described how the SFNP was first released:

*they went so far as to say I wasn't allowed to have chocolate chips in the classroom which is crazy. It's ludicrous, I work in a high school. And to be honest, I have students who are going at break and snorting coke, I've got single mothers, I've got you know these kids all have to be able to make choices but it's the choices that are put in front of them and if it's just only healthy stuff, that's not a choice.*

P3 expressed the view that, "Having choice, but at the same time promoting healthy food choices when possible" was important; while P2 spoke to food being very personal and individuals wanting to be in control of their food choices:

*You know, I think that perspective is really, valuable when it comes to food, because I think people feel really (pause), um people don't want to not feel like they have control over food. Like it's something that's very personal to people, it's something that has huge cultural implications, you know, all kinds of stuff. And, I think, people need to feel in control of their food choices and so you don't want to take that away from, even like the school, you know.*

As a result of the lack of choices or the unpopular choices offered in school, T7 shared “so in junior high and high school when students can leave, I think it's pretty telling, like their opinions on the choices that they're given.” On the other hand, T9 described students as the unconscious consumer in the school, eating what is provided and going on about their day:

*Obviously we're not expecting youth of that age to be making all food decisions at home, but it's, I find that the missing piece is connecting it to some of the choices that they're making which then links to the food that's being sold because they kind of you know literally herd in, stand in line, pick from whatever's there and move on. I don't think that they're at a point where they're making conscious decisions.*

However, T6 considered “just making sure in the forefront is trying to give healthy food choices to kids and it's all about...choice too, not just saying this is what you need to eat.”

Nevertheless, T4 perceived cafeterias to have more control over food offerings and suggested the healthy choice should be the only choice, by emphasizing,

*it is possible for them[cafeterias] to use you know better ingredients and more vegetables in their products and really if they limit their choices and offerings to healthier choices, then the kids are going to really not have a choice but to have those healthier options.*

## 7.5 Chapter Summary

This chapter examined FL events and practices; FL enablers and barriers; as well as the existing FL knowledge, skills, behaviours, values, attitudes, language and norms within the NS public school system, derived from participant interviews. Through exploring participant perspectives of the socio-cultural context of FL in schools, four key themes were identified. Each theme aligns with Bronfenbrenner's ecological model and presents the intersection of each sphere in the ecological model, as summarized below.

This first theme, *Complexity of Capitalism and Regulation*, demonstrates there was perceived to be a ripple effect in the governance structure from federal policies, guidelines, and strategies (e.g., Canada's Food Guide) to the individual in schools via rules (e.g., SFNP), resulting in symbolic control over FL in schools. Furthermore, the corporate food industry was perceived to have significant power over consumers. This power is often through marketing and advertising which targets children while also creating social control mechanisms through dominant discourses and ideologies. For example, the social norm of convenience influences big food companies to offer low cost and lower quality foods thereby exerting power over some lower socio-economic families. Finally, the physical environment in schools, as understood by participating parents and teachers, alongside the school infrastructure and proximity to outside foods, were seen as challenges to creating a supportive food environment and to be dominated by both the governance structure and corporate food industry.

The second theme, *Nexus of Social Practices*, revealed the various elements of the social structure related to schools. In particular, the broader societal ideologies were noted by participants, which were considered to impact the socio-cultural aspects in the



school. In addition, the unique level of schools is highlighted as a key component of the social environment in which the school food governance influences. Furthermore, partnerships are highlighted in relation to community involvement and family engagement. Challenges and opportunities were identified that corresponded to broader social ideologies, which in turn corresponded to perceived barriers related to the inherent tensions between food governance and the corporate food industry.

The third theme, *Intricacies in the Value of Food*, highlighted the personal values, beliefs, and attitudes towards food held by participants. More specifically, the expressive culture (formal instruction and role modeling) can support FL practices in schools. In addition, the hidden curriculum was viewed as influencing FL events and practices as well as the informal learning opportunities transferred to students/children from their teachers and parents. Both the expressive culture and the hidden curriculum were impacted by the presence (or lack) of food governance and corporate food industry influences. Likewise, the broader socio-cultural ideologies that are created in and around schools were felt to impact personal values, beliefs and attitudes.

Finally, the last theme, *Dichotomy of Two Cultures*, established the tensions between teachers and parents vis-à-vis roles and expectations of school vs home; the costs and sacrifices that are made pertaining to food quality; priority (or lack) of food in schools; and exercising freedom of choice. These participant perspectives demonstrate the interrelated nature of each of the spheres of my theoretical model, including cultural systems. Ultimately, both teachers and parents have the same goal of supporting the health and wellbeing of students/children, however, there were several contradictions and

potential negotiations that were felt to occur related to food in schools between teachers and parents as well as within themselves.

In summary, this chapter presented the socio-cultural findings with respect to the context of FL in schools as perceived by parent and teacher participants. Several FL events and practices as well as barriers and enablers to FL were identified; personal and system level values, beliefs, norms and attitudes have also been revealed. The next chapter, Chapter Eight, will integrate findings from this chapter and the previous chapter, Chapter Six (exploring dimensions of FL), to further the critical analysis by focusing on the state of FL in schools, and more broadly.

## CHAPTER 8: DISCUSSION

This chapter shifts away from data analysis and interpretation to bringing my study findings together in a comprehensive and critical discussion; stemming from my proposed *FL Conceptual Model* (Chapter Three) while integrating findings from Chapters Six and Seven. As discussed in Chapter Three, there were different theoretical perspectives informing the current understanding of FL in the literature. In Chapter Six, interviews and documents were analyzed against my proposed *FL Conceptual Model*. These relationships were then interpreted within a wider framework of socio-cultural context in Chapter Seven. Drawing upon the tenets of ethnography to guide data collection and analysis while using Bronfenbrenner's Ecological Model and Whitehead's Cultural Systems Paradigm (CSP) as an analytical tool to examine the many factors and forces influencing FL, my overarching question, *how is FL conceptualized and communicated in NS public schools?*, will be contemplated. It is important to remind the reader that data analysis was done in a deductive manner against my proposed *FL Conceptual Model*; and in an inductive manner to gain insight into the socio-cultural dimensions of FL which aligned with my theoretical framework.

In this chapter, I first present a summary of my research findings; second, I provide my critical analysis of the most interesting and significant findings obtained from this study and situate them within the context of relevant published literature; third, I provide recommendations for improving FL in the school community; and finally, I close the chapter with addressing the strengths and limitations of this study.

### 8.1 Summary of findings

This section highlights the key findings in Chapter Six, as it relates to my proposed *FL Conceptual Model* (described in Chapter Three) and the key findings in

Chapter Seven which align with my theoretical model (described in Chapter Four); which intersects Bronfenbrenner's Ecological Model and Whitehead's (2002) Cultural Systems Paradigm (CSP).

### ***FL Conceptual Model***

Data presented in Chapter Six outline what FL means through the various contexts of literacy as defined by UNESCO (2006). Each of the FL dimensions from my proposed *FL Conceptual Model* were represented in the findings; though some more prominently than others. ***FL as skills*** outlined many types of food skills, such as, but not limited to, cooking skills, meal and menu preparation, grocery shopping, and scrutinizing food media. ***FL as text*** delineated the different types of text as verbal, written, and visual; types of text that were presented include classroom discussions (verbal), SFNP (written) and food environment (visual). ***FL as a learning process*** demonstrated functional and interactive teaching and learning styles such as school gardening, connecting food to experiences, and role modeling. ***FL as applied, practiced and situated*** referred to attitudes and values as well as events, such as classroom practices. Lastly, ***FL as societal transformation*** drew connections to changing social norms that exist within the individual and the broader society. A recent FL scoping review (Truman et al., 2017) conducted on 38 novel definitions highlighted the frequency of the following themes appearing in the definitions: knowledge (69%), food/health (66%), skills/behaviours (58%), food systems (47%), culture (23%), and emotions (13%). The findings of this research are consistent with most of the explicit FL attributes found in the above-named scoping review. It should be noted that just as each of the literacy definitions from UNESCO (2006) overlapped and intersected, so did each of the

multiliteracies within FL; therefore, not one definition of literacy is mutually exclusive. This also aligns with the findings from Truman, Lane and Elliott (2017) that not one FL definition is exclusive.

It is also important to note how teachers and parents conceptualized FL, both in the school setting and more broadly, which is a core finding of this study. This finding suggests the socio-cultural context of FL is acknowledged in each aspect of the multiliteracies comprising FL. For teacher participants, their view of FL influenced how they designed their courses, decided which pedagogical approaches to use in the classroom, and how or if they supported the SFNP. These teachers illustrated how they applied a broad and comprehensive range of FL events and practices which are embedded in social constructs to provide a strong practical component of aspects of FL. These findings are consistent with a recent study suggesting teachers have an important role in transferring food literacy education successfully to students (Nanayakkara et al., 2018). Parent participants described parenting practices in their home life as well as within the school setting in a socio-cultural context, such as teaching their children basic food skills related to food preparation, meal planning, and grocery shopping, budgeting as well as creating a positive relationship with foods through modeling an open mind towards new foods, thereby substantiating this finding. Furthermore, these findings associated with parents are consistent with a recent study by Colatruglio & Slater (2016) that found FL in the home environment was connected to parents' influence, participation in food-related activities, and food and nurturing – all of which are socio-culturally centered.

In considering the components of FL, I assessed the participant interviews and key policy documents for the dimensions outlined in my proposed *FL Conceptual Model*.

The most central finding here is that each of the FL dimensions presented in my proposed *FL Conceptual Model* were reflected in the teacher and parent interviews as well as the review of documents, with some being more explicit than others. It was demonstrated through the analysis of interview data that both teacher and parent participants were able to describe aspects of FL in all dimensions of the conceptual model with some aspects of FL more prominent than others and many overlapping. The Learning Outcomes Framework (presented in Chapter Six, Section 6.2.3.4) revealed an opportunity for a supportive structure to advance FL teaching and learning since there were certain subjects that introduced aspects of the FL dimensions. The SFNP (presented in Chapter Six, Section 6.3.2.3) displayed a comprehensive approach to support the food environment and included all aspects of the FL dimensions. Overall, each of the FL dimensions were apparent, to some degree, in all interviews and both key policy documents. This validates the application of each of the dimensions outlined in my proposed *FL Conceptual Model* in order to inspire a common understanding of FL.

### ***FL within the Cultural Systems Paradigm***

Data presented in Chapter Seven highlight the various aspects of Whitehead's (2002) CSP model and Bronfenbrenner's Ecological Model, which will be outlined in this section.

The *Principle of Human Ecosystems* refers to the phenomena of historical processes and events between shared groups; this aligns with Bronfenbrenner's macro-, exo-, and meso-systems. Whitehead (2002) asserts that "there is a symbiotic relationship between the cultural system and the physical environment in that the environment has some influence over the direction that a cultural system may progress, and the cultural

system influences the way that the environment is exploited or endured” (p. 7). Given the prevalence of the collective rules through food governance and corporate food industry, it became evident how interrelated these two societal factors and forces are within the school community and how they can dominate or determine social norms with the physical environment. A previous study noted that the broader “environmental conditions pose distinct challenges to FL improvement...because they involve complex social relationships and cultural values, and have broad impacts in terms of food attitudes and habits” (Truman & Elliott, 2018, p. 4) and that there is a “need for widespread policy support in the areas of food education, food security, and public health in order to begin to address the role that environmental conditions (or sociocultural contexts) play in contributing to unhealthy eating practices” (Truman & Elliott, 2018, p. 4). As a result, the cultural meaning that influences individual behaviour may be directly or indirectly derived from values and practices related to food governance and corporatization of the food industry. Furthermore, socio-cultural aspects of the corporate food industry (i.e., economic structure and marketing systems) and resultant historical processes such as trade wars have either institutionalized or sustained this cultural system. Maintaining the status quo of the food system (encouragement of unhealthy food production and consumption) perpetuates the lack of food related knowledge and skills; this is entrenched and problematic in our society as we are all shaped by our experiences with food, either by compliance or resistance.

*The Principle of the Interrelationship between Socio-Cultural Contexts, Processes, and Meaning Systems* is applicable to the second theme presented in Chapter Seven: Nexus of Social Practices and is affiliated with Bronfenbrenner’s meso- and

micro-systems. My examination of the social environment relevant to food in school communities revealed aspects of why and how societal ideologies influence the school structure and the relationships within this structure (social organization) while presenting some barriers and opportunities for change such as advancing FL practices by way of changes to the food environment. The essence of this theme relates to an understanding of the socio-cultural contexts in which specific FL behaviours occur, such as the social construction of consumers; the socio-cultural processes within and across the social systems including societal ideologies; as well as the socio-cultural meaning that these contexts and processes have in applying FL policies, programs and practices to the school setting. These factors and forces can either support or hinder the school food environment. A previous study conducted by Walton, Signal, & Thomson (2012) found that socio-cultural aspects of the wider community within which the home and school is situated also influences and penetrates the effectiveness of the school food environment. This is consistent with my findings.

*The Principle of Human Categories* aligns with the third theme, Intricacies in Value of Food, seeing as individual behaviour patterns and ideation structure (beliefs and values) were demonstrated. This category runs parallel to Bronfenbrenner's micro- and individual level systems. The value of food was explored and portrayed through expressive culture (formal instruction and role modeling) as well as the hidden curriculum (events and practices and informal learning opportunities). Each of these elements have been influenced by societal pressures and norms and create the interpersonal situations and notions of reality of which participants situate themselves. Furthermore, the normative behaviour patterns and social system within the school



setting were institutionalized by the cultural groups of teachers and parents who participated in interviews. These findings align with those of an exploratory study conducted by Slater, Falkenberg, Rutherford, & Colatruglio (2018) to identify FL competencies, most specifically in the areas of confidence and empowerment with food and joy and meaning through food.

Finally, the *Principle of Paradigmatic Flexibility* speaks to the differences in behaviour/ideational expressions that the teachers and parents conveyed at times; especially in the context of imparting FL to the school population. These multiple factors and forces create competing and contradictory positions which ultimately contribute to create “society”; this includes the roles and expectations of home vs school; cost of quality; priority of food; and freedom of choice. In line with previous findings (Ronto, Ball, Pendergast, & Harris, 2017), teacher participants suggest the home environment does not always promote FL. Furthermore, a recent study found that parent participants feel that the school environment should be improving FL through offering healthy foods at a reasonable price; consistency between food and nutrition education and school food services (Rathi, Riddell, & Worsley, 2018). Another study found limited school resources and volunteers, role/responsibility conflict concerning the feeding of children, and student food preferences as tensions between the school and home environments (MacLellan, Holland, Taylor, McKenna, & Hernandez, 2010). It is noteworthy to highlight that as the societal ideologies previously identified impact teachers and parents in the school and home environment, the totality of this system (interactions between macro-, exo-, meso-, micro-systems and individuals) shape their thoughts and actions. Ultimately, these findings revealed how the knowledge, skills, beliefs, and attitudes of

teachers and parents were developed over time and with assistance from societal ideologies.

From the data presented in Chapters Six and Seven, the meaning of FL is situated within a socio-cultural context of which the process of production and reproduction of FL knowledge and skills are reinforcing the prevalent social norms and ideologies, thus maintaining the status quo. Consequently, the socio-cultural factors and forces establish a sense of control and generate barriers to true food sovereignty which will be described next.

## **8.2 Critical Analysis of FL in NS public schools**

Food is “personal, public, and political and impacts all aspects of human life. Nothing more fully and powerfully influences the daily lives of everyone than our food, food choices, and food systems” (Kevany, 2018, para. 7). Taking this into consideration, food and health concerns inevitably raise the issue of power. I will now describe how ruling relations and practices promote FL related ideologies, which seem to be deeply rooted within the NS public school system, governing the food-related decisions and behaviours made by teachers and parents, and in the end, students, with respect to FL policies, practices, processes, and programs.

“Social relations” exist as the social processes people participate in during their daily lives (Travers, 1996, p. 543). FL knowledge transference (teaching and learning) is an exchange process in social relations. These social relations are most often not obvious nor instant in the school, home, or outside setting and embodied in society “without their conscious knowledge” (Campbell and Gregor, 2002, p. 31). It is “the interplay of social relations, of people’s ordinary activities being concerted and coordinated purposefully,

that constitutes “social organization” (Campbell and Gregor, 2002, p. 27); which most often relates back to societal ideologies.

Ideology refers to “those ideas and images through which the class that rules the society by virtue of its domination of the means of production, orders, organizes, and sanctions the social relations that sustain its domination” (Smith, 1987, p. 55). This suggests that what people view as real in society is presented in such a way that facilitates the preferences, which include “social or cultural norms and values that influence consumer demand for certain types of food” (Ericksen, 2008, p. 240), of those who are in power. As such, ideology is a method used by those in power to force a dominant view (Smith, 1990). By way of example, textual practices are influential elements of the ruling apparatus, which establishes how power is socially organized.

The corporate food industry has become masterful at this through its textually mediated methods of marketing and advertising; while the role of government to protect and provide for citizens through policy levers and various practices is another mechanism of ruling. Therefore, the lived reality of people in society is chosen for them and enacted in such a way that a “version of the world...is peculiarly one-sided” (Smith, 1990, pp. 83-84). However, not all participants in this study felt subjected to this power and discussed the need for choice, often observing instances where the ‘rulings’ were not adhered to.

The types of texts that were identified, examined, and described in this study exist primarily within schools to support ruling relations and practices. The types of ideological messages the documents hold in addition to how they influence school related experiences associated with FL were detailed. Given the key policy documents, SFNP and Learning Outcomes Framework, it is important to note, “the capacity to rule depends

upon carrying messages across sites, coordinating someone's actions here with someone else's there" (Campbell & Gregor, 2002, p. 33) which "dictates a work process...[and] constitutes a ruling relation" (pg. 34) which, in turn, creates a social organization in the school setting.

As the results uncover, the SFNP and Learning Outcomes Framework are policy documents that exist within both the exo- and meso-system; the key policy documents are developed by those in the exo-system and those within the mesosystem are responsible for actioning the texts of these documents. Most teachers and parents in this study were aware the SFNP existed, however most were not familiar with all the specific elements within the policy. These findings align with other studies in other jurisdictions which found that approximately half of teachers (Lanier, Wagstaff, DeMill, Friedrichs, & Metos, 2012) and the majority of parents (MacLellan et al., 2010) were unaware of the SFNP and those who were, did not demonstrate a comprehensive understanding of it. This is identified as a key barrier to effective implementation of the policy and demonstrates a ruling relation with regards to transference of FL knowledge. If the school setting does not consider the SFNP important, it allows for the possibility that the message does not get filtered to others in the setting. Alternatively, if some, but not others, in the setting filter selective SFNP messages, their personal values, beliefs, and attitudes may allow for mixed messages within the system. This finding facilitates an understanding towards the varied perceptions of the SFNP as held by the participants involved in this study.

For teachers and parents, the FL messages and ideas that are embedded within the SFNP are through nutrition education curriculum and food and beverage standards (what

is served and sold). The overall promotion of FL seems to be represented predominantly through knowledge, attitudes, beliefs, values and skills but some participants described a variety of documents that were transported home from school. For example, some teachers and parents mentioned using Canada's Food Guide within their classrooms and households to learn about and apply healthy food choices. Other types of documents that communicate ideological messages about FL, as described by parents, included lunch menus and emails/letters sent by schools to parents. Most notably, these types of "text" can equip parents with knowledge about the operational practices of SFNP and programs, as well as the types of food items that are either encouraged or discouraged from being sent to school with students. At times, there were "text" sent home about celebratory events (e.g., class parties) that notified parents of the event requesting healthy food items be sent with their children to school to align with the SFNP; at other times, parents were asked to bring in/assigned unhealthy items for a class party. Regardless of the SFNP directives, some parents described sending their children to school celebrations with foods that were not in alignment with the SFNP. This translates into another example of the types of contradictory messages being promoted by the school in contrast with the reality of the lived experience within schools relative to FL. It is clear that some schools are promoting ideological messages for a healthy and supportive food environment; though not all teachers and parents might follow these principles, since some of them value moderation, freedom of choice, and associate celebratory occasions with the consumption of unhealthy food items, as described in the interviews for this study.

These results appear to suggest that text documents, such as the SFNP and the Learning Outcomes Framework, strive to promote a variety of ideological FL messages

to school staff members, students, and families. However, teachers and parents are filters of these messages and the act of applying the text in these documents generally depends on personal values and beliefs; which at the surface would make one think that the problem with FL is within the individual. The question I still hold is: how can individuals become aware of the problem with FL if societal ideologies prevail? As such, it is my stance that the problem with FL is located within the broader society, and not the individual alone; that there is a feedback loop in this system creating and recreating the ideologies. The following section will touch upon how societal values, beliefs, and ideologies positioned within the macrosystem infiltrate through the exo-, meso-, and microsystems.

It is within the macro-system where the values, beliefs, and ideologies held by the teacher and parent participants are located. It became clear through conducting my individual interviews that research participants held a variety of values, beliefs, and ideologies with respect to FL. Perhaps the most salient were the personal and societal values associated with health and nutrition from a medical model approach; these findings suggest individuals are most often informed by an individualistic ideology. This ideology assumes that the current social system provides adequate and equal opportunity for individuals and that they can make a choice within this system. However, “the dominant cultural model in the 21<sup>st</sup> Century society is individualist” (Jackson, 2005, p. x) which “fails to unravel social, psychological, and institutional influences on private behavior” (Jackson, 2005, p. xii). As such, educational practices that attempt to help an individual to adapt to an oppressive situation or maintain the status quo, does not erase the inequities of the social system. For example, teaching aspects of FL through the

curriculum, but not teaching critical FL, does not address the structural inequity created by corporate food industry nor empower individuals to challenge this power imbalance.

Broader societal values related to FL are embedded within social constructs. “The social constructs are... intertwined; [and] the ways in which they relate are fluid and interdependent with the nature of people's experiences within them” (Travers, 1996, p. 547). It was clear from some parent participants that they value healthy food but were challenged by competing priorities, which I themed as cost of quality – these issues often relate back to lack of time and desire for convenience foods which often did not align with their overall values. As just described, the process of marketing and advertising shapes individual experiences by driving socially constructed ideologies and creating a social organization. Therefore, the role of marketing and advertising and its effect on the vulnerable population remains implicit. It is important to note that these broader social relations outside the school and home create societal ideologies that manifest within them.

Intrinsically, advertising and promotion of food is connected to creating food inequities through varying prices and inequitable pricing strategies. This perpetuates the issue of corporate food industry power which aligns with a study conducted by Travers (1996) in NS where the purchase decisions of the research participants were negatively affected through corporate food industry’s contribution to increasing food costs. This ideological influence of corporate food industry manipulates consumers into thinking they have individual choice while continuing to promote food with a business model focus (to make a profit). This reinforces the corporate hegemony over FL knowledge,

events and practices evoking individuals to take the responsibility of translating the marketing and advertising messages and/or refraining from these pressures.

Another consideration related to FL from a macro-system perspective is the relative placement of food security in the school food environment. Food security appears to be valued, to some degree, as it is incorporated into the SFNP. Some teacher and parent participants shared that the initiation of school food programs (i.e., breakfast and lunch) resulted from an identified need to support families who may experience issues related to food insecurity. These programs have since grown and evolved to include other considerations, such as time scarcity. However, the fear of ‘stigma’ still exists. This aligns with the recent findings from a study conducted by McIsaac et al., (2018) which highlights the need to address the social roots of food insecurity. Furthermore, a few participants identified that some of the food offerings that were purchased and provided to students at school were low-cost, convenient, and less quality food items, and as such, not considered healthy foods. These findings suggest that food security may not be a priority within the macrosystem (despite government policies) since other issues hold more importance; such as cost, time, and convenience. Therefore, the social-structural conditions that create this complex issue needs to be emphasized and challenged.

In our contemporary times, the broader societal values of time (or lack of), freedom of choice (or lack of), and competing priorities locates the problem (or absence) of FL within the individual. However, the political, economic, social, cultural and physical environment we live in has created and recreated these ideologies and reinforces these social norms. This represents a “line of fault” (Smith, 1990) which identifies there



is a contradictory way of knowing about FL. Furthermore, the illumination of social relations has revealed how factors and forces positioned within the macro- and exo-system, such as values, beliefs, and ideologies, play a significant role in governing the experiences of those situated in the meso- and micro-systems associated with FL. In closing, this study attempts to make the conceptual divide between “the macro” and “the micro” disappear (Smith, 2005, p. 36) in order to suggest radical changes to shift FL knowledge, skills, and attitudes in individuals, schools, and society with the aim of building a common understanding of FL.

### **8.3 Recommendations**

Often, public health speaks of upstream interventions that are associated with “societal, economic, legal, and political structures and norms to improve access and opportunities for all” (PHAC, 2015, p. 6). Given the nature of the complex school system, upstream interventions can be difficult to implement but still require action. Such actions require political will and empowerment to advocate for structural changes and may not be within the direct control of the school community. However, midstream interventions are considered to “generally focus on creating supportive physical, social, and food environments so that healthy behaviours become easy behaviours for advantaged and disadvantaged populations” (PHAC, 2015, p. 6). This type of intervention is well suited for FL in schools as it aligns with embracing a comprehensive approach to supportive school health environments. Furthermore, downstream interventions typically “focus on producing individual behaviour change, skill development or providing services to prevent harm” (PHAC, 2015, p. 6). Downstream interventions relate well to school teaching and learning strategies as well as

programmatic strategies. For this purpose of this section, I will address the midstream and downstream interventions for schools.

### **8.3.1 School Food Literacy Interventions**

Given the complexities of the food system, food environment, and food culture, it is imperative that a multifaceted FL intervention be designed to address these complex and interrelated factors. Notably, most people, especially children and youth, need to better understand the connections between agriculture, food, health, and the environment. For that to happen, there is a “need to emphasize the personal health and environmental benefits for them and their families that are offered through better understanding of the food system” (Francis et al., 2003, p. 113) including “where, how, and by whom foods are produced” (Scrinis, 2007, p. 122). That said, “education alone is not sufficient to facilitate or enable behaviour change” (Gill & Boylan, 2012, p. 55); there is a need for a comprehensive approach. Therefore, there is a need to address the school food environment holistically including “meaningful policy initiatives” (Kubik et al., 2003, p. 1171), such as comprehensive SFNP. Such policy initiatives are essential to effect change but “efforts will also be more effective when they are overseen by an advisory group representative of the broader school community” (Kubik et al., 2003, p. 1171). Furthermore, changes in food culture have had a significant influence on this disconnect. Fast, cheap, and easy food has grown to be the prevailing choice for our busy lifestyles to accommodate our need for convenience; this has led to a decline of cooking and food preparation skills. It has been suggested that the approach to food culture change in schools likely needs to “focus on healthy eating for the purpose of wellbeing...and take

into account the social and cultural benefits” (Fordyce-Voorham & Lai-Yeung, 2016, p. 169) in order to appeal to school aged children and youth.

Next, there is a need to address the core components and elements of the intervention (Center for Community Health and Development, 2015) and what schools might employ to enhance living and learning oriented towards better FL. The conditions that need to change are related to food knowledge, skills, and behaviours as well as attitudes and value placement towards food, agriculture, health, and the environment, which includes oceans and fisheries. In addition, modifying policies, such as SFNPs, and the broader system policies or guidelines related to CSH with the aim of addressing “intervention functions” (Michie, van Stralen, & West, 2011, p. 6) are essential for success.

### **8.3.2 School Food Literacy Intervention Functions**

For a food and nutrition intervention in school to be effective, a whole school and community approach is necessary. Michie, van Stralen, & West (2011) outline a range of intervention functions that can be used to address FL in schools and in the whole school community which align with this study results. Such intervention functions include 1) education – increasing knowledge or understanding related to food, food systems, food environment, and food culture; 2) training – imparting skills about nutrition and food skills, agri-food skills, media skills, and systems thinking skills through pedagogical methods; 3) environmental restructuring – changing the physical or social context such as a closed school campus during meal times; in which case students are unable to leave the premises for competing unhealthy food options; 4) modeling – providing an example for people to aspire to or imitate through school community members; and 5) enablement -

increasing means/reducing barriers to increase capability or opportunity by way of classroom curriculum and hidden curriculum. A comprehensive SFNP often includes many of these intervention functions and the intent of the policy is to reinforce them through a mandated practice. However, strong accountability is needed.

Recently, researchers (Scherr et al., 2014) provided a framework for implementation of a multicomponent, school-based nutrition intervention and measurable student outcomes regarding “dietary and nutrition knowledge and behaviour, science process and critical thinking skills, healthy food preferences and consumption patterns” (Scherr et al., 2014, p. e14). The integrated program has a focus on nutrition education and promotion; family and community partnerships; supporting local agriculture; foods available at school; and school wellness committees and policies (Scherr et al., 2014, p. e16). This multicomponent intervention aligns well with the aforementioned proposed intervention functions to address the obvious disconnect between what students are learning at school and what they see modeled in the broader environment related to food systems, food environment and food culture. However, the multicomponent nutrition intervention is aimed primarily at increasing knowledge and skills. Given today’s food culture, it is imperative that a food and nutrition intervention include knowledge and skills but also strategies to help shape social norms to enable widespread behaviour change (Gill & Boylan, 2012) directed towards improving FL.

### **8.3.3 Strategies to Enhance School Food Literacy Intervention Functions**

While considering a multidimensional and multicomponent FL intervention, the relationship between Paulo Freire’s *Critical Pedagogy* and Habermas’ *Theory of Communicative Action* warrants further exploration (Kellner, 2003). Sumner (2013)

linked Freire's work related to educational power and politics with Habermas' communicative action which serves to transmit and renew cultural knowledge in relation to FL. In advancing FL work, there is an opportunity to weave Freire's critical education and pedagogy with Habermas' communicative action domains of knowledge: empirical/analytic knowledge, historical/hermeneutic knowledge, and critical/emancipatory knowledge, into FL interventions.

Cultivation of an environment that values food is essential in a multidimensional and multicomponent FL intervention. Therefore, 'cultural action', defined as "a systematic and deliberate form of action which operates upon the social structure, either with the objective of preserving that structure or of transforming it" (Freire, 1997, p. 160) is key to a successful FL intervention. The intent of FL cultural action is to 'liberate' and empower individuals in schools, and ultimately society, for transformative change; such as resolving the contradiction between what is being taught and learned in schools about food and health versus the epitome of the broader environment. Habermas' *Theory of Communicative Action* is required to build on pedagogical methods to foster social change. In order to cultivate social change, teaching strategies must be designed in such a way that empirical/analytic knowledge, historical/hermeneutic knowledge, and critical/emancipatory knowledge is developed through functional, interactive and critical literacy techniques in the 21<sup>st</sup> Century (as described below).

Within a range of strategies, schools may be able to action several of the above noted intervention functions and activities in order to enhance living and learning oriented toward better health literacy, and ultimately FL, by applying change

management techniques for cultural action and resultant social change. Key areas of focus include strategies within the classroom and beyond the classroom.

### ***Within the classroom***

A variety of pedagogical methods could be employed in the classroom; however, to keep with the 21<sup>st</sup> Century teaching and learning strategies, inquiry-based teaching (or student-centered learning) is essential. Student-centered learning is critical pedagogy at its core as this teaching strategy is sensitive to the effects of relations of power.

Nevertheless, this “must be augmented with other forms of active engagement in thinking – systems, spatial, temporal, and quantitative” (Berkowitz et al., 2005, p. 251). For that reason, it is imperative that students learn through interactive, hands-on activities.

This will address the individual level components of FL and allow students to action Habermas’ three knowledge domains by first becoming aware of individual actions and the links between them and complex interactions oriented to understanding the broader environmental. The key elements to address within the classroom include:

*Food Literacy education and skills.* Food literacy education and skill development can reach across the three overarching factors related to the disconnect between what students are learning in school and see modeled in the broader environment: food systems, food environment, and food culture. This component would include curriculum development and implementation to include components and dimensions of the multiple literacies (Appendix A) as defined in the proposed *FL Conceptual Model*. Elements to consider including are: cooking demonstrations and instruction to address culinary deskilling, edible and instructional school gardens to meet the need for children and youth to understand where food comes from, and potentially meal pedagogy to teach about

regional food preferences, rituals, values, beliefs and social constructs related to food. There is also an opportunity to raise awareness about our passive consumerism via engaging in dialogue and concentrating on food media literacy. This may be the foundation to creating a cultural shift related to food social norms as well creating an awareness and skills to navigate the food system and food environment. Ultimately, by empowering individuals to become aware of the ideologies related to FL within our dominant society, they can be empowered to engage others with the aim of disrupting social norms in order to pursue transforming the system and society.

### ***Beyond the classroom***

Students continue to learn beyond the classroom where they come in contact and interact with others in the school community. According to Jackson (1968), this “hidden curriculum” refers to “the disconnect [or the connect] between what is overtly taught in educational institutions and what pupils actually learn—the “unpublicised features of school life” (p. 17; as cited in Cotton, Winter, & Bailey, 2013, p. 192). The hidden curriculum communicates about the structures of authority and values embedded in the operations of school to students; such as school climate and school culture; and addresses the broader context of the FL conceptual model. These messages emphasize what is valued in the school environment and can either reinforce or undermine health and food messages being taught in the classroom. In the case of school food environment and culture, if students are being taught healthy eating in the classroom but the cafeteria does not support healthy eating, students are learning that healthy eating is not valued in their school. Also, if the SFNP is not promoted, and getting lost in the administration of it, students cannot be afforded the opportunity to appreciate the value of the policy.

Therefore, Freire's notion of cultural action is a necessary component of a FL intervention in schools to empower the school community towards social change while Habermas' three knowledge domains can be applied throughout the school food environment to reduce the barriers to participation in public discourse thereby developing critical thinking skills related to the social, cultural, economic, and environmental factors.

Due to the very nature of learning outside the classroom, a CSH approach is merited. Aligning with this approach, the following strategies and elements, adapted from Scherr et al. (2014), are essential in a FL intervention beyond the classroom: *Food literacy education and skills.* This component would include professional development activities for teachers; cafeteria and afterschool program staff and volunteers; and garden staff and volunteers related to the multiple literacies within FL in order to collaborate for better interactions between agriculture, cooking, and the classroom. It is also important to include youth engagement in this process to gather all perspectives for a synergistic collaboration. This strategy has the potential to influence the food system, food environment and food culture seeing as only through the multiple dimensions of FL can literacy education raise critical consciousness and eventually transform social practices.

*Family and community engagement.* Promotion, incentivization, and reinforcement activities in this component may consist of family newsletters, brochures, calendar of events, demonstrations, prize draws, leadership meetings (such as school advisory committees or wellness committees), community-sponsored health fairs, and social media. This strategy has the potential to influence the food environment and food culture



and bring awareness to food systems and empower society through nudges in order to raise critical consciousness.

*Community partnerships designed to support localized agriculture.* Enabling food procurement and purchasing practices to include localized and sustainable fresh food would encourage a shift in agricultural practices and draw attention to the broader components of FL related to social, cultural, economic, and political environments. This may take the form of an environmental restructure in that it is a social and physical change from the norm of processed foods. This can be accomplished through community gardens, farm to school; farm to cafeteria; local food fundraisers such as community food boxes; fruit and vegetable programs; and installing a local salad and/or potato bar. There is also opportunity for students to learn from farm visits, community gardens and recycling or waste programs; all of which support the community and bring students closer to nature, thereby encouraging more active consumers valuing where their food comes from and the sustainability of the environment. This particular strategy has the opportunity to address food system, food environment, and food culture and be a profound act of resistance to the corporate capitalist society in which we live.

*School food and nutrition policy.* Components of such policies include the provision of foods served and sold in schools but also should include elements of the broader food environment such as health education, role modeling, supporting local foods, fundraising, special occasions, marketing and advertising, and community engagement and partnerships, to name a few. Creating an environmental restructure related to SFNP is fundamental for success as a closed school campus will likely increase uptake of healthy foods served and sold in schools. There is also an opportunity to teach about SFNP in

curriculum or utilize the meal as a teaching strategy; applying these strategies will link the SFNP to the following intervention functions: education, training, restriction, environmental restructure, and enablement to address food environment and food culture, and potentially food systems. Through teaching and learning processes, or literacy, there is social power, which in turn, can create societal transformation.

*School Advisory Committee.* School advisory committees ought to be established for each school site. The committee should consist of youth, parents, teachers, school food personnel, principals, and community members to provide accountability to the FL intervention. The committee should also be linked closely to parent-teacher associations in order to foster a positive food environment in and around schools. This strategy has the potential to influence school food environment and school food culture. In fact, this strategy is integral to delivering food messages through the home and school and coordinating messages so as not to produce competing and contradicting messages.

The above-named strategies to address FL have the potential to empower individuals, families, and communities to cultivate an environment that values food over time, supports local agriculture over ‘Big Food’ systems, and appreciates dimensions of interactions with all aspects of health and the environment.

#### **8.3.4 Measures of School Food Literacy Intervention**

It is best practice to measure and evaluate an intervention. “Implementation activities [strategies and intervention functions] are designed to increase the use of knowledge or change attitudes or behaviour of organizations or individuals” (National Center for the Dissemination of Disability Research, 1996; as cited in Blake & Ottoson, 2009, p. 28), therefore, the measures of a school FL intervention “should seek to assess

the three characteristics (knowledge, skills, and behaviours) across each identified domain” (McKecknie, p. 224; as cited in Vigden, 2016). At this time, there is no consistent measure for defining ‘good’ or ‘poor’ levels of FL (McKecknie, p. 224; as cited in Vigden, 2016) however progress is being made in this area (Thomas et al., 2019).

In addition, critical FL involves food tasks related to the “individual interacting with the social environment (media, culture, society, technology) and making ethical decisions about food” (Fordyce-Voorham & Lai-Yeung, 2016, p. 179). Furthermore, critical FL, akin to critical health literacy, can be described as “empowerment and social and political action existing at an individual and population level” (Sykes, Wills, Rowlands, & Popple, 2013, p. 9). This level of FL refers to the advancement of FL to food citizenship in which case food social norms may be reshaped to reconnect with and value food. It is important to recognize that measuring critical literacy is very challenging as it is “intertwined with functional skills, health [and food related] knowledge and awareness, and, therefore, difficult to assess outside a specific context” (Frisch, Camerini, Diviani, & Schulz, 2011). Therefore, my proposed *FL Conceptual Model* is an excellent framework to begin the development of indicators in order to measure FL including critical literacy.

Given FL develops both inductively and deductively, it is challenging to consider how to approach building indicators for success. Inductively, FL emerges from the applying knowledge and skills to food related topics within each dimension. Deductively, a FL framework emphasizes the interrelated food topics throughout academic subject areas, policy levers, and has the ability to deconstruct the oppressive social system that prevents FL in the first place (Freire, 2000). Both approaches merely present a systematic

approach for the categorizing aspects related to food. Furthermore, this approach would allow a shift from evaluating FL (or lack of) as an individualistic problem and as such, a risk for negative health outcomes, to evaluating the effectiveness of FL interventions on health outcomes. This would elevate the power of FL and potentially empower structural changes.

#### **8.4 Limitations of the Inquiry**

Despite the strengths of this study (discussed below), the findings should be considered with some caution since this empirical investigation is unique in the current research setting of selected NS school communities. It is important to note that in education and health research, the breadth of the disciplines as well as the various contexts individuals are situated in may inherently affect results. As such, limitations occur for all studies, and due to the nature of this doctoral study, the data coding and themes identified were conducted by myself and the analysis was then presented and discussed with my supervisor. This process allowed for a consistent method; however, the data coding and analysis could involve several researchers across interdisciplinary fields to create and validate themes when using this method for another study.

Another limitation of this research is that it only applied tenets of ethnography. In line with ethnography, I employed research methods including individual interviews, document review and analysis, and the collection of my own personal reflections and observations; however, the interviews happened rather quickly over a short time-frame and as such, I was unable to analyze each interview before proceeding to the next. This inherently deviated from a true ethnographic study.

In addition, this study explored a limited sub-set of participants from the larger population. Since only teacher and parent perspectives have been captured in this study; other perspectives (i.e., student, cafeteria workers, janitorial staff, public health, school board level, community partners, etc.) are missing which creates the fundamental challenge of knowing what should or should not be included in the findings. I strived to gather various perspectives, however, as with many studies, those who participate may only represent the groups of those interested in the topic of inquiry and as such present a biased viewpoint.

Given this study was restricted to a small sample size (n=17), the findings that emerged from the interviews assisted with describing the socio-cultural context of FL as well as the social practice of FL which helped to produce general results, including the similarities of the FL experiences across and within school communities for both teachers and parents; however, this does not allow for producing comprehensive generalizations about FL overall given culture, ethnicity, gender and indigenous ways of knowing in NS may all impact food culture.

A further limitation of this study is the number of school communities and school boards depicted in the study. The socio-cultural context of FL in NS may not necessarily reflect those of the school communities represented nor of all the school boards represented. There may be different experiences, practices, and actors across the province that influence or impact FL in different school communities and school boards.

With these concerns in mind, it is important to acknowledge that the following important issues if attempting to generalize the findings should be verified:

- Findings rely on participant self-report; which may create bias; this may not reflect the changing situations and relationships between the school and broader society over time.
- Findings were collected from within a single province, NS. This facilitated data collection and controlling for variation, as well as the depth of exploration into FL through a process of constant comparison across multiple sources of data but limited the breadth of data. As such, this limits the generalizability of the findings.
- Data were collected from a subset of teachers and parent population; this may not provide an all-encompassing picture of FL.

While acknowledging such limitations, my chosen data collection and analysis methods all reinforced one another, which is a key strength of this study. Furthermore, this research exhibits a valuable conception of FL. For that reason, this study confirms my proposed *FL Conceptual Model* and highlights how researchers, practitioners and policy makers should strive to build this conceptual model into 1) an education tool to raise awareness and empower individuals about all aspects of food in addition to using this tool to critique the social constructs within each dimension; and 2) an evaluation framework in order to address their distinct context, locally, provincially, nationally, and globally.

## **8.5 Conclusion**

In the contemporary food system, individuals, particularly children and youth, are increasingly becoming disconnected from understanding how and where their food comes from. This impacts food choices and eating patterns which ultimately has an effect on

health, agriculture and the environment, individually and globally. The key factors and forces creating a profoundly complex public health issue include food systems, food environment, and food culture. A *FL Conceptual Model* is proposed and validated with the aim of tackling the complex issues related to society's disconnection to food. The multiple literacies outlined in the proposed model are applied when considering developing, implementing, and evaluating FL interventions in schools. It is clear that programs are ineffective on their own; where and how people live, learn, work, and play requires simultaneous change. Ultimately, the goal of a multidimensional and multicomponent school FL intervention is to create the space for 'praxis' related to "reflection and action" upon the food environment, food system, and food culture "in order to transform it" (Freire, 1997, p. 33) and enable social change to improve overall health and environmental outcomes, for individuals and populations.

## CHAPTER 9: CONCLUSION

This chapter concludes my research study. This dissertation has involved testing my proposed *FL Conceptual Model* and conducting an empirical investigation into the phenomena of FL within the school context. A recap of my thesis is summarized below, along with the implications for policy and practice and research recommendations for the future. I then close the chapter with my concluding thoughts and personal reflection.

### 9.1 Summary of Thesis Chapters

This dissertation provided the following trajectory:

- Chapter One introduced the research problem and research aims
- Chapter Two presented a review of literature pertaining to contextual influences in the development of FL
- Chapter Three discussed FL paradigms and limitations and presented my proposed FL Conceptual Model
- Chapter Four described my research methodology
- Chapter Five communicated my research design
- Chapter Six portrayed my findings related to testing my proposed *FL Conceptual Model* against primary and secondary data sources
- Chapter Seven represented my empirical findings related to socio-cultural context of FL in school setting
- Chapter Eight examined my qualitative findings with a critical lens

### 9.2 Overall Relevance and Contributions

The findings of this study, as presented in Chapter Six and Seven, and summarized in the previous chapter, have several implications for addressing the needs for more comprehensive FL education in schools as well as developing a more supportive school food



environment. First, I will present implications for the literature, and then I will provide the implications for the systems within Bronfenbrenner's ecological model.

### **9.2.1 Implications for the literature**

The literature review on FL (summarized in Chapter Three) indicates there are arguments and contradictions as well as lack of consensus among researchers as to the meaning of FL. This study contributes to the literature through empirical validation of the dimensions of FL into a comprehensive model which should be of interest to researchers, practitioners and policy makers. For that reason, this is a new and absolute contribution to the body of FL research.

This study also strived to fill the contextual gap in the existing literature related to the understanding of FL. From an entirely analytical perspective, this study contributes to the literature by incorporating an interdisciplinary view into the broader generalization of findings.

### **9.2.2 Implications for the macro-, exo-, meso- and micro-system**

The implications for this study also expand beyond the confines of schools. It has helped to expose the ruling relations within social organizations; for example, the oppressive nature of corporate food industry, the current situation with government policies, and the continued deficit of FL discourse as an individualistic problem. By making this analysis available to the public, it is possible that public discourse related to societal ideologies around food may change, thereby altering the notion of reality and cultivating a societal transformation.

In addition, it is imperative that a systems approach to FL be promoted to challenge current ideologies (*macro-system*). This approach endeavors to enhance FL from the individual and household focus to put a spotlight on the broader society in order

to ensure inclusion of FL in international, national and local systems. As such, the current mix of government policies and corporate interests in profit does not support a shift in food systems, food environment, and food culture. It is crucial to transform societal ideologies, values, and policies in order to facilitate the intersection between social and critical consciousness to challenge the capitalist system that imposes its values, structure and practices related to food upon society. It is worthwhile mentioning here that the intersection of the Healthy Eating Strategy and the newly announced National Food Policy in Canada may disrupt this status quo.

Achieving inclusion of FL in national and regional policies and programs (*exo-systems*) while acknowledging consumer culture is embedded within these policies is a fundamental challenge. In an attempt to reduce inequalities, progressive political change is imperative. As such, greater awareness among policy makers and decision makers related to repositioning of FL from its current dominant individual placement to social orientation is necessary. Furthermore, there is a need to engage with interdisciplinary and intersectoral stakeholders for collective action as well as to ensure proper evaluation methods are in place to capture FL from both the individual and societal level. The proposed *FL Conceptual Model* is a remarkable instrument for all of the above reasons.

Emphasis must also be placed on FL interventions as a whole school and community approach (*meso-system*) to empower students, the future citizens of our society, in order to challenge the status quo. Chapter Eight provides some recommendations as to how to achieve this which should include integrating FL into and beyond the classroom. If the Province of NS chooses to be visionary and made every effort to integrate FL education into all aspects of school communities by making it

mandatory (including each of the dimensions of FL as defined in this study), using meal time pedagogy, and teaching about the SFNP in the classroom, they would be trailblazers in Canada. The intention of this approach is to create a paradigm shift in order to inspire social transformation resulting food culture change and more active food citizens to improve health and well-being of self, community and society.

Finally, it is important that FL is acknowledged in a social context (*micro-system*) which is powerful for citizen engagement. Given the fact that food is a very rich and complex topic, spans the interdisciplinary scope, and is deeply personal, it can be actioned within social networks and through the wider context of society. As such, increasing knowledge and awareness within inter-sectoral contexts, developing networks and communities of practice should be considered. Furthermore, it is important to note the overall aim of this study was to understand how FL is conceptualized and communicated; by doing so, the adoption of FL as a concept could disrupt the status quo and empower critical thinking and engagement through political system and social movements.

### **9.3 Future Research Directions**

This research study was conducted within the school context as it relates to FL; as such, it provides some insight and direction for broader contexts and for future research. This section will outline suggested future research directions.

First, from a contextual aspect, this research primarily reflects the school context; however, the substantiated *FL Conceptual Model* provides a solid foundation for many research avenues; therefore, a few suggestions are made for future research directions. A research avenue that I believe is open for the future is validation of the *FL Conceptual*

*Model* in different school based and broader societal contexts. It should also be noted that since this research explores teacher and parent perspectives related to FL, replicating this study in another context, such as another setting and with another audience, might provide more of a comprehensive research setting for generalizing present findings.

Second, the study of FL could be more comprehensive if all interdisciplinary perspectives were incorporated. As such, it may be of interest to evaluate findings in future research directions across or within various disciplines. Furthermore, participant observations may provide more convincing evidence to better understand the socio-cultural factors and forces in addition to validating this study's findings.

Third, and more specifically, this study has developed some of the construct measures in the present context for an evaluation framework. This is based on previous literature and empirical findings but should be verified and refined in new research contexts to measure FL, such as utilizing my *FL Conceptual Model* as a framework for identifying and measuring FL across policies, programs and initiatives. One such avenue may be to use this framework and apply it against the proposed *Canada Food Policy*.

#### **9.4 Concluding Remarks**

To answer my overarching research question, *how is food literacy conceptualized and communicated*, and to achieve the research aims of this study, I developed a *FL Conceptual Model*. Upon testing this model, it was found that teacher and parent participants were situated within each dimension of FL, although some dimensions were more striking than others. In addition, my qualitative findings provide rich insight into the socio-cultural context of FL in schools and demonstrates many of the barriers are related to broader societal ideologies that are reinforced in the school community.

Cullen et al (2015) presented a framework that situates FL at the intersection between an individual and the broader community and stated behaviours and skills cannot be separated from their environmental or social context. Their proposed definition and framework intended to bring together various researchers, practitioners and policy makers for a collaborative and coordinated approach to FL. My *FL Conceptual Model* builds on this foundational work and proposes an approach for a more concerted effort towards collective action on FL across various disciplines. Palumbo (2016) suggested research should be aimed at the broader interpretation of FL to provide evaluation tools and methodologies. My *FL Conceptual Model* targets the notion of evaluation and how to develop a framework for such. Cullen et al (2015) and Palumbo (2016) seem to provide an implied support of this study acknowledging there is a gap in the literature related to collective action and creating more of a connection between the individual and the broader societal factors affecting FL; this helped to frame the original foundation of this study four years ago.

Amin et al (2018) recommended investigating teacher perspectives and evaluating curriculum as important to advance this work; my research has gathered teacher and parent perspectives (both influencers of children's FL knowledge and skills) and reviewed curriculum outcomes to determine if FL is captured over the duration of public schooling. Truman and Elliott (2018) called for targeted involvement to focus on the socio-cultural topics related to food that examine its meaning and value; my research has explored such topic areas. This exploration establishes a remarkable appreciation of the contribution that this study makes towards FL in the school setting.

Furthermore, the social organization of school includes socio-cultural ruling relations. Hence, it suffices to argue that the links between the social and system relationships, along with teachers' and parents' shared definitions of FL, help to define school food cultures and ultimately, how FL is conceptualized and communicated. This research clearly demonstrates that teachers and parents both play an essential role in the school food environment. As such, teachers and parents both influence the school and the school equally influences them. These research findings suggest that FL experiences within the school context cannot be improved upon unless the factors and forces, including the socio-cultural context within our broader society, are transformed. This can only be achieved through raising awareness and empowering teachers and parents to transform the ways in which they communicate ruling and support or challenge the ideological messages to the various members within the school community as well as the broader society.

To end, a large part of this study's significance is directly related to potential implications for social change within the context of school but also more broadly. By using tenets of critical ethnography, I have attempted to extricate how things happen as they do and provide an empirical representation of the processes that need to be deconstructed and reorganized in order to promote and communicate FL as timely and an evolving concept with clear implications for its application to practice. There has never been a more urgent and optimal time than now to do this given 1) the SDGs are in place as a result of growing concern for the sustainability of human societies; 2) we are currently in our third year of the *Decade of Action on Nutrition* which is to support a common vision to achieve optimal nutrition for a healthier, more sustainable future; 3)

the revised *Canada Food Guide* emphasizes eating behaviours, food skills, culture, health and the environment (all components of FL) was recently released; 4) the federal government recently committed to a *National Food Policy* and to creating a *National School Food Program* in cooperation with provinces and territories; and, 5) NS has recently provided support to review the SFNP. As noted, FL is a potent mechanism for social change.

### **9.5 Personal Reflection**

This study profoundly affected me. Through this experience, which was to explore socio-cultural norms around FL, I have revealed the dominant discourse with teacher and parent participants is that of a biomedical or individualistic nature. This philosophy has been fixed in society for many decades. As such, this is what I was taught in university over 20 years ago and initially shaped my knowledge around food, nutrition and health as a clinical dietitian. Over the past ten years however, I have been exposed to and practiced the ecological public health perspective related to food and health which has allowed me to realize the complexity and socio-cultural forces that affect FL. That said, it has been a journey to challenge my own perceptions with regards to what I knew to be true facts and convincing knowledge in my science discipline of nutrition and dietetics. I now have a personal and professional call to action to try to evoke that knowledge disruption in others throughout my field of nutrition and dietetics but also other disciplines that intersect food.

Upon entering my doctoral studies, my intention was to contribute to the growing body of knowledge related to FL in schools, beyond that of food skills. However, this inquiry has caused a significant disruption in my own knowledge and understanding as I

have become abundantly aware of the ideologies dominating society which impact and reinforce FL practices and processes. What I have come to learn is that we all participate in ruling relations; yet, we all have the ability to disrupt and potentially transform societal ideologies, social structures, and social organizations through our own knowledge, authority, and expertise. I now feel inspired to empower others to challenge these ideologies and support a process of structural changes and social transformation. As such, literacy is a form of social power that can create the necessary context for social consciousness. Therefore, I will continue to critique and challenge the dominant ideologies, socio-cultural forces, and subsequent discourses that prevent individuals from seeing and understanding the various forms of power and domination that exist in our daily lives; and in doing so, I will not allow for the status quo. Rather, I will encourage others to recognize how social factors and forces shape our identities, potentially reinforcing existing social inequities. Due to this insight, the power of FL became much more apparent to me as essential to generate structural changes in our society; not just to improve upon food skills. In conclusion, the rich learning I have experienced both professionally and personally through this journey has encouraged me to continue to challenge injustices and inequities.



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## APPENDIX A: DIMENSIONS OF MULTIPLE LITERACIES

<b>Literacy/Domains</b>	<b>Functional/Basic Literacy</b>	<b>Communicative/Interactive Literacy</b>	<b>Critical Literacy</b>
<b>Health Literacy (Foundational)</b>	Sufficient basic skills in reading and writing to be able to function effectively in everyday situations (Nutbeam, 2006)	More advanced cognitive and literacy skills which, together with social skills, can be used to actively participate in everyday activities, to extract information and derive meaning from different forms of communication, and to apply new information to changing circumstances. (Nutbeam, 2006)	More advanced cognitive skills which, together with social skills, can be applied to critically analyse information, and to use this information to exert greater control over life events and situations. (Nutbeam, 2006)
<b>Nutrition Literacy</b>	Refers to proficiency in applying basic literacy skills, such as reading and understanding food labelling and grasping the essence of nutrition information guidelines. (Silk et al., 2008; Peterrson, 2009)	Comprises more advanced literacy skills, such as the cognitive and interpersonal communication skills needed to interact appropriately with nutrition educators, as well as interest in seeking and applying adequate nutrition information for the purpose of improving one's nutritional status and behaviour. (Silk et al., 2008; Peterrson, 2009)	Being proficient in critically analysing nutrition information and advice, as well as having the will to participate in actions to address nutritional barriers in personal, social and global perspectives. (Guttersrud, 2014)
<b>Agri-Food Literacy</b>	Understanding the elements of agricultural literacy: the relationship between agriculture and the environment, food, fiber and energy, animals, lifestyle, the economy and technology (Yeatman, 2016)	Applying knowledge and develop skills to navigate the agricultural and food system	To understand and apply values based or emancipatory knowledge related to agricultural and environmental literacy; understand the role of agriculture and food in social order and maintenance of culture and tradition; and encompass emancipatory knowledge of ecological considerations, rights based perspectives of food production and capacities for collective decision making and action (Yeatman, 2016)

<b>Literacy/Domains</b>	<b>Functional/Basic Literacy</b>	<b>Communicative/Interactive Literacy</b>	<b>Critical Literacy</b>
<b>Food Media Literacy</b>	Understanding of the key concepts of media literacy as it relates to food and nutrition	Applying knowledge to develop skills to evaluate media claims related to food and nutrition	To <i>access</i> useful information in the media; To <i>analyze</i> media messages using critical thinking skills (being able to identify bias and credibility of a source, differentiate fact from opinion, determine if a message is unrealistic, and understand a message's purpose); To <i>evaluate</i> a message (to determine its truth, applicability); To <i>create</i> media messages which achieve specific goals. (Center for Media Literacy, n.d.)
<b>Cultural Literacy</b>	Understanding and valuing own cultural context related to food and having knowledge about cultural eating patterns and family traditions (adapted from Stein, 2004)	The ability to differentiate between cultural food practices (food selection, preparation and storage) through the process of directly engaging in interactions with individuals of different cultures (adapted from Stein, 2004)	Being socially proactive towards diversity and respecting differences among individual and populations cultural context related to food and food practices (adapted from Stein, 2004)
<b>Civics Literacy</b>	Understanding the key concepts related to civic life, politics, and government, and why politics and government are necessary (adapted from Branson, 1988)	More advanced skills related to identifying and describing; explaining and analyzing; and evaluating, taking, and defending positions on public issues (adapted from Branson, 1988)	More advanced skills, together with social skills to engage in civil and reflective discourse, and assume leadership roles when appropriate (adapted from Branson, 1988)
<b>Eco-literacy</b>	Understanding of self and the whole, relationships, and networks, a focus on contextual knowledge, consideration of quality, attention to processes, and patterns (Woolworthon, 2006)	Develop skills related to the scientific method observation and experimentation; and systems thinking: thinking and relationship- a sense of relationality, connectedness, and context; Sense of place and active citizenship- engagement in local culture, history, and organic community together with the ecosystem (Woolworthon, 2006)	Develop the many dimensions of one's being in interaction with all aspects of the environment; Develop an organic understanding of the world and participatory action in and with the environment. (Berkowitz et al., 2004)

<b>Literacy/Domains</b>	<b>Functional/Basic Literacy</b>	<b>Communicative/Interactive Literacy</b>	<b>Critical Literacy</b>
<b>Food Literacy (Culmination of above literacies)</b>	Basic communication of credible, evidence-based food and nutrition information, involving accessing, understanding and evaluating information (Slater, 2013) and focus on the individual and their interactions with food (Fordyce-Voorham & Lai-Yeung, 2016).	Development of personal skills regarding food and nutrition issues, involving decision making, goal setting and practices to enhance nutritional health and well-being (Slater, 2013) and the food tasks performed at this level involve the individual interacting with people (family, teachers, students and local shopping vendors) in their near environment (Fordyce-Voorham & Lai-Yeung, 2016).	Respecting different cultural, family and religious beliefs in respect to food and nutrition (including nutritional health), understanding the wider context of food production and nutritional health, and advocating for personal, family and community changes that enhance nutritional health (Slater, 2013); the food tasks performed at this level involve the individual interacting with the social environment (media, culture, society, technology) and making ethical decisions about food (Fordyce-Voorham & Lai-Yeung, 2016)



## APPENDIX B: RECRUITMENT POSTER

# Calling current teachers, school cafeteria workers and parents of school-aged children!

Researchers at Dalhousie are conducting a study exploring the challenges and successes of supporting healthy school food environments. As part of this research, they are seeking participants that fit the following criteria to partake in one on one interviews:



- Parents of school-aged children
- Current teachers
- Current school cafeteria workers



"Building on successes and learning from challenges of the Nova Scotia food and nutrition policy" is funded by the Canadian Institutes for Health Research and the Max Bell Foundation, and led by co-principal investigators Dr. Sara Kirk and Dr. Jessie-Lee McIsaac. Participants will be asked to share their experiences, successes and challenges to supporting healthy school food environments.

**If you or someone you know is interested in participating, please contact Kimberley at [kimberley.hernandez@dal.ca](mailto:kimberley.hernandez@dal.ca)**



## APPENDIX C: INFORMED CONSENT



### *Written Informed Consent for In-Person Interviews*

#### **Building on successes and learning from challenges: A comprehensive evaluation of the school food and nutrition policy in Nova Scotia**

Dear \_\_\_\_\_ :

As you may know, the provincial government planned to release a revision of the 2006 School Food and Nutrition Policy. We planned to undertake a research study to understand how the policy would be disseminated and implemented, and to explore potential associated changes however the policy has not yet been released. Our research aims have now shifted to explore support for the current school food and nutrition policy and the context, challenges and enablers around healthy school food environments.

The project is led by Dr. Sara Kirk and Dr. Jessie-Lee McIsaac at Dalhousie University, and funded by the Canadian Institutes for Health Research and the Max Bell Foundation. You are being asked to take part in a stakeholder interview as part of the research study at Dalhousie University that will explore school food environments and system contexts. The description below tells you about the expected time needed to participate in the study and possible risks or discomforts, you may experience.

#### **What is the purpose of this study?**

The proposed research aims to build knowledge on nutrition policy implementation and support across schools in Nova Scotia. We would like to find out about your experiences with schools in relation to the current food and nutrition policy and challenges/enablers to healthy school food environments.

#### **What you will be asked to do?**

A research assistant will arrange a time to meet with you, either by phone or in person. The interview will take place at a convenient time and location for you. The interview will take roughly 60 minutes. If you agree to participate, you may be contacted again throughout the project to gather additional information.

#### **Who can participate?**

We are selecting key stakeholders across Nova Scotia that are affected by the school food policy and have an influence on school food environments. You have been identified as an appropriate individual to provide perspective to the experiences of your organization/role as a [parent, teacher, food service worker, public health worker, etc].



### **Consent and confidentiality**

Every effort will be made to keep your data confidential. All data from interviews will be labeled with a participant number, not your name. If quotations are used in publishing this study, your name and/or any other names occurring in your speech will be replaced with made-up names. Tapes and transcripts of the interviews will be kept in a locked filing cabinet at Dalhousie University and all data used for analysis on a computer will be password protected so that only members of our research team have access. A list of names and matching participant numbers will be stored in the project research office at the Applied Research Collaborations for Health office at Dalhousie University, for a period of 5 years after publication, when it will be destroyed. Only the researchers involved in the study will have access to the names of study participants and anonymity will be respected throughout the analysis and reporting of the results. No data or direct quotes will be reported, presented, or published that will identify you or your organization unless your permission is requested and granted. You may request a summary of your data after the study is over.

### **Possible risks and discomforts**

There are few anticipated risks related to your involvement in this study. You may feel uncomfortable answering questions about institutions and colleagues with which/whom you are associated. If at any time you feel uncomfortable answering any questions, you may choose not to answer them, and/or you may ask the researcher to leave. You can end your participation in this study, and request to have your data removed at any time during your participation, without any negative consequences to you.

### **Possible benefits**

There is no compensation for participating in this project. Participating in the study might not benefit you personally, but we might learn things that will help to support school food and nutrition policy. An indirect benefit is that you will be contributing to our understanding of how food and nutrition policies are disseminated and implemented and schools.

### **Who will be conducting the research?**

Drs. Sara Kirk and Jessie-Lee McIsaac are in charge of the study. Both are affiliated with the School of Health and Human Performance at Dalhousie University. This research is funded by the Canadian Institutes for Health Research and the Max Bell Foundation.

### **Who can I contact for more information of if I have questions about this study?**

Principal Investigators:

Dr. Sara Kirk (902-494-8440)

Dr. Jessie-Lee McIsaac (902-494-8439)

The Health Sciences Research Ethics Board of Dalhousie University, who make sure that research is done with the highest ethical standards, have reviewed this project. *If you*

*have any concerns about any aspect of this study or your involvement, you may contact Catherine Connors, Director, Research Ethics, Dalhousie University for assistance at (902) 494-1462, [ethics@dal.ca](mailto:ethics@dal.ca).*

**Consent Form**

Please indicate your agreement to participating in the interview.

I agree \_\_\_\_

Please indicate your agreement to have this interview audio recorded.

I agree \_\_\_\_

Please indicate your agreement to **the use of quotes, without individual attribution or identifying context**, from the interview.

I agree \_\_\_\_

Please indicate your agreement to be contacted in the future for follow up or potential further interviews.

I agree \_\_\_\_

\_\_\_\_\_  
(Name of participant)

\_\_\_\_\_  
(Signature of participant)

Date signed: \_\_\_\_\_

## APPENDIX D: SEMI-STRUCTURED INTERVIEW GUIDE

### Interview Guide – Teachers/Parents

1. Tell me a bit about yourself.
2. Can you briefly describe how you support healthy school food environments in your current role [as teacher/parent]?
3. Can you describe how your role as (teacher/parent) aims to support the implementation of the school food and nutrition policy?

#### Probes

- a. What resources have been introduced?
  - b. How have you worked with schools?
4. Based on your experience, what prevents schools from creating a healthy food environment?

#### Probes

- a. School leadership, school food culture, student preferences, cost, profits, feasibility?
  - b. Broader food system, food environment, food culture?
5. Based on your experience, what makes it easier for schools to create a healthy school food environment?

#### Probes

- a. What resources could help to enhance implementation?
  - b. Beyond resources, what is needed?
6. Who/what are the other important people/organizations/factors that influence healthy school food environments?
    - a. What are their roles? Do they support or obstruct?
    - b. If they obstruct, is there something that could be done so that they support?
  7. How could a revision of the NS school nutrition policy influence your work/role?
  8. Who else should we talk to for these consultations?

## APPENDIX E: ETHICS REVIEW LETTER



### Health Sciences Research Ethics Board Amendment Approval

April 03, 2017

Sara Kirk  
Health Professions\Health & Human Performance

Dear Sara,

**REB #:** 2015-3644

**Project Title:** Building on Successes and Learning From Challenges: A Comprehensive Evaluation of the School Food and Nutrition Policy in Nova Scotia

The Health Sciences Research Ethics Board has reviewed your amendment request and has approved this amendment request effective today, April 03, 2017.

Sincerely,

Dr. Tannis Jurgens, Chair