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Elementary School Teachers' Lived Experiences of Teaching Nutrition: A Qualitative Study

Ashley P. Vito Ms, *Western University*

Supervisor: Nouvet, Elysee, *The University of Western Ontario*

A thesis submitted in partial fulfillment of the requirements for the Master of Science degree in Health and Rehabilitation Sciences

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Abstract

Early nutrition education is crucial for lifelong health and learning (Cusick et al., 2016). Elementary schools and teachers play a significant role in shaping children's understanding of nutrition (Cotton et al., 2020). Yet, there's limited research on teachers' experiences related to teaching nutrition to elementary students and how it affects students' well-being. This qualitative study examines 13 Ontario-based teachers' experiences in delivering nutrition education. Interviews revealed themes such as teachers' perceptions of their role and challenges and facilitators in teaching nutrition, including time constraints, resource scarcity, body image concerns, and cultural differences. These findings offer insights into teachers' complexities in imparting this vital skill among children. The research aims to support teachers and promote positive changes in education, fostering classrooms of positivity, impartiality, and acceptance. Ultimately, it strives for each student to embrace their dietary preferences, understand their culinary heritage, and envision their future selves, fostering inclusivity and an enriching learning environment.

Key Words

Nutrition, Nutrition Education, Children, Elementary Schools, Teachers, Teachers Experiences, Ontario, Qualitative Study, Food Neutrality

Summary for Lay Audience

Early nutrition education lays the foundation for lifelong healthy behaviours and essential learning capabilities (Cusick et al., 2016). While children can acquire this knowledge from various sources, elementary schools and teachers significantly shape children's understanding of nutrition (Cotton et al., 2020). However, limited research delves into teachers' lived experiences teaching nutrition education to elementary-aged children in Ontario, and how teachers perceive these teachings and activities to impact students' well-being. This qualitative study addresses this gap by investigating the experiences of 13 Ontario-based elementary school teachers in delivering nutrition education.

Through purposive and snowball sampling, semi-structured interviews revealed distinct themes for each objective. The first theme, *Teachers' Perceptions of Their Role in Nutrition Education* explored their values, feelings, and beliefs about teaching nutrition, teachers' perceived feelings of being role models, and what teachers perceive as nutrition education. The second theme of *Navigating Challenges and Facilitators in Teaching and Talking about Nutrition Education* highlighted potential challenges due to limited time, scarcity in curriculum resources, and sensitive topics that impact children such as body image, cultural differences, socioeconomic status, and the intricate nature of the teacher's role as a generalist educator. These emergent themes offer nuanced perspectives on the multifaceted challenges and facilitators teachers face in teaching this imperative lifelong skill to impressionable children, and the potential influences that shape children's relationship with food and health within the context of elementary education.

The significance of this research serves not only as a potential support mechanism for teachers but also does due diligence to the lived experiences of teachers, and their perceived impacts on students in their class. Additionally, this study has the potential to spark positive transformation and bolster assistance within the educational sphere. Through uncovering insights into educators' encounters and viewpoints regarding nutrition education, this research aims to play a part in fostering classrooms characterized by positivity, impartiality, and acceptance.

Co-Authorship Statement

The primary researcher (AV) designed the research project. Recruitment was done by (AV). Data collection was done by (AV), and all interviews were conducted and completed by (AV). Data was analyzed and reviewed by (AV), (EN), (AC), (CS). (AV) drafted the thesis with feedback from (EN), and the advisory committee.

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Chapter 1

1. Introduction

1.0 Background

Optimal nutrition is vital for children's growth and development (Onyango, Nikiema, & Kimokoti, 2021). Early nutrition education forms the foundation for healthful behaviours and a range of skills and learning abilities that will progress through a child's lifespan (Dudley et al., 2015; Hall et al., 2016). Specifically, school environments are one of the main facilitators for delivering nutrition education in Ontario (Ontario Ministry of Education, 2019). Children aged 8-14 spend most of their day in a school environment (Cotton 2020; Haynos, 2016) where an intricate web of peer interactions, adult influences, and mandated curriculum collectively shapes the nutritional landscape of students during their time at school, laying the foundation for lifelong eating habits and understandings of food (Critch, 2020).

Teachers are positioned to play a crucial role in influencing students' dietary choices. Nonetheless, in these positions of influence, teachers may encounter various pedagogical challenges (Hall et al., 2016), such as diverse student nutritional needs, conflicting information sources, and food industry marketing, which can make it difficult to provide accurate nutrition education (Smith et al., 2019). Teaching nutrition also involves addressing sensitive topics like body image and food insecurity (Ontario Ministry of Education, 2019), for which teachers may feel unprepared (Hall et al., 2016). Research suggests that certain nutrition education practices can have a detrimental effect on children aged 8-14 if done inadequately (Contento et al., 1998; Prelip et al., 2006).

After understanding the landscape that is talking about nutrition and food itself, it is imperative to look at an alternative approach to teaching and talking about food and nutrition. One way to think about this topic is through a very valuable approach—the food-neutral approach (Hamel, 2022). Figuratively, it is a new way to think about food, teaching nutrition, and educating children on

the imperative health subject (Hamel, 2022). Defined food neutrality relates to focusing on taking the attention away from the benefits or consequences of food items (Hamel, 2022). More specifically, it looks at creating a non-judgmental environment for children to feel safe eating a variety of foods (Hamel, 2022).

Experts suggest some specific ways to implement food neutrality, including: (1) presenting foods as all acceptable or equivalent; (2) avoiding grouping foods as “good” or “bad” or “healthy or “unhealthy”; (3) calling food by their names; for example instead of calling food a “treat”, refer to it as a “chocolate bar”; (4) describing foods objectively based on things like colour, texture, and flavour; (5) replacing food rewards with non-food rewards (e.g., extended recess, music, dance parties); (6) avoiding praising children when they try new foods, as this can feel like pressure even though the reinforcement is positive. Instead, use neutral sentences such as, “I see you tried the food, did you like it?”; (7) allowing kids to eat all foods they bring in whatever order they prefer; (8) focus on providing opportunities for children to learn about safe food handling, food skills, and exploration of various foods; and (9) role model flexible eating habits (Hamel, 2022). Ultimately, the adoption of a food-neutral approach in the current nutrition education in Ontario may be an important first step to improving children’s understanding of food, while minimizing the harmful unintended effects of the current provincial nutrition program, and ever-changing societal influences.

Analytical Framework Used to Understand Influences Within the School

A framework that can help improve our understanding of the influences that a school can have on a child is the comprehensive school health model (CSH; Joint Consortium for School Health, 2019) as outlined in Appendix A. The CSH model, rooted in the socioecological framework (Bronfenbrenner, 1981), serves as a comprehensive lens for understanding the multifaceted influences on children within the school setting. In this research, the model helps to understand where children are positioned within the school, as well as how teachers interact with these various aspects of the schools. The CSH model places the child at the centre, emphasizing the interconnectedness of various factors, including teaching practices as one. More factors within the CSH model emerge as influential on children according to this model, including the school's social and physical environments, teaching practices, policies, partnerships, and services, which

influence children's nutrition knowledge and behaviours. In essence, the comprehensive school health model provides structure and depth to the research, illustrating the intersectionality of influences on children's nutrition within the school setting.

1.1 Significance of the Research

While there has been limited research focused on providing support to Ontario teachers in enhancing their ability to teach nutrition education effectively, there also exists a noticeable gap in the literature when it comes to understanding the lived experiences of teachers and as well their perceived impact on children. This gap underscores the need to delve deeper into the perceived impact on children who receive these lessons, gaining insights into their understanding, behaviours, and overall well-being. This exploration from the teachers' perspective is not only crucial in bridging the current gap in the literature: but it is also key to informing more tailored and impactful nutrition education strategies that genuinely meet the needs of young learners.

1.2 Research Aims and Objectives

The primary purpose of the study was to investigate the impact of nutrition education on children in grades 4-8 from the unique perspective of teachers. By examining how teachers perceive and deliver nutrition lessons, and the impact this education has on children, we aim to gain a deeper understanding of teachers' experiences teaching nutrition education, and the perceived impact it may have on children. The research aims are:

- To explore teachers' personal experiences of teaching nutrition education to elementary-aged children (grades 4-8).
- To explore teachers' perceived understanding of how practices and activities within schools impact students' nutrition education and well-being.

1.3 Research Design

This research adopts a constructivist paradigm and acknowledges the co-construction of knowledge between researchers and participants (Guba & Lincoln, 1994). Within this framework, qualitative methods, specifically in-depth semi-structured interviews, were chosen to facilitate a nuanced understanding of Ontario educators' experiences in teaching nutrition and its impact on elementary-aged children's nutrition education. Semi-structured interviews allowed for a deep exploration of the complex and subjective aspects of teachers' interactions with the curriculum and their views, capturing the depth and breadth of their experiences (Pope & Mays, 2020).

1.4 Personal Motivation

Engaging in research that aims to better understand teachers' perceptions and experiences relating to nutrition education within elementary schools and its effects on children carries a deeply personal importance for me. I witnessed my sister's negative experiences with this crucial aspect of education and health promotion as a young child. As she progressed through elementary school, I noticed a severe change in her eating habits, love for food, and thoughts toward food. Her distressing journey with food and the fear of food stemmed from the barrage of "healthy messages" that were given without context or guidance through nutrition education and the greater elementary school environment. Although these messages intended to promote nutrition and well-being, the opposite occurred, fuelling her fears of food and weight gain, and exacerbating her struggles. It was heartbreaking to witness her experiencing such distress and confusion surrounding food. Witnessing firsthand the detrimental effects of inadequate nutrition education on a loved one has fuelled my determination to delve deeper into this topic. By conducting research in this field, I aspire to shed light on the importance of balanced, comprehensive nutrition education that not only imparts knowledge but also nurtures a healthy relationship with food. My goal is to contribute to the development of effective strategies that can protect and empower all children and prevent similar struggles that occur in my loved ones. Please refer to Chapter 3 for an in-depth analysis elucidating how reflexivity plays a pivotal role in this research and is crucial for maintaining objectivity and minimizing biases stemming from my connection to the subject.

In the following chapter, I provide an introductory exploration of the pivotal role that optimal nutrition plays in the growth and development of children. Drawing on peer-reviewed research, systematic reviews, and grey literature, this chapter underscores how early nutrition education forms the bedrock for cultivating not only healthful behaviours but also a diverse array of skills and learning abilities that extend across a child's entire lifespan. Additionally, this chapter delves into the school environment, which emerges as a central area where children in Ontario embark on their journey of learning nutrition education. Within this context, teachers take on a critical role as the primary agents responsible for imparting the nutrition curriculum to children. The interplay between optimal nutrition, early education, school environments, and teachers is important to understand in grasping the layers of influences on children's learning about nutrition in the classroom and the school environment more broadly.

Chapter 2

2.0 Background

This chapter is organized into two sections aimed at orienting readers to the important background of this research. Part I (2.1) synthesizes key findings within peer-reviewed research pertinent to this study's primary questions. It includes a review of the literature on the impact of nutrition education on elementary school children as well as the available research on teachers' experiences in teaching nutrition education to elementary school children. This section highlights the significant impact nutrition education can have on children's overall health and well-being, and the interplay between teachers, curriculum, and school environments in children's learning about nutrition. Engagement with this literature sheds light on the crucial role of nutrition education in elementary schools and in the development of unique research questions for this study.

Part II provides a brief overview of the current Ontario nutrition curriculum, within Ontario's 2019 elementary Health and Physical Education curriculum for children in grades 4 to 8. Ontario's elementary Health and Physical Education curriculum is mandated. This curriculum serves as the foundational source for nutrition education across the province and has a goal to ensure that every teacher adheres to the same guidelines and learning outcomes. Gaining familiarity with this curriculum is crucial to an exploration of teachers' experiences of nutrition education and has facilitated my ability to understand participants' references to specific aspects of the curriculum in semi-structured interviews.

Part I: Nurturing Health in Schools: Exploring Nutrition Education and Environments

Key themes from the literature presented in this section are derived from a search of both peer-reviewed and grey literature. Sources were retrieved primarily through scholarly databases, including SCOPUS, MEDLINE, and PUB MED, using "key terms" that included child health, nutrition, nutrition education, education, teachers, and child and youth nutrition. Academic databases such as SCOPUS, MEDLINE, and PUB MED are well-known databases used to

retrieve peer-reviewed articles, systematic reviews, and meta-analyses related to all topics of children, nutrition, education, schools, teachers, and health. In addition to identifying sources through these databases, I consulted several grey literature sources including reports, dissertations, conference proceedings, government publications, teacher blogs, nutrition podcasts and websites. These sources were retrieved/identified by hand searching in Google, through bibliographies of peer-reviewed sources, as well as through school dietitians. This grey literature was particularly useful because it included insights from experts in the field and emerging trends or perspectives that were not always captured in conventional academic sources.

2.1 The Impact of Nutrition on Health Outcomes for Children

This section delves into the positive effects that proper nutrition can have on children's health, including their physical health in terms of growth, cognitive development and immune function, and their mental health and overall well-being. This section also explores how inadequate nutrition can harm children's physical and mental health, leading to issues like chronic diseases, obesity, anemia, oral health problems, eating disorders, and cognitive impairments. It underscores the importance of promoting healthy relationships with food to support overall well-being.

Adequate nutrition habits are related to a variety of positive health outcomes including, but not limited to, stronger immune systems, lower risk of communicable diseases, longevity of life, and improved infant, child, and maternal health (Ronzio, 2017). The US Centres for Disease and Control Prevention adds that adequate nutritional habits in childhood can support muscles, strengthen bones, lower the risk of chronic diseases such as heart disease, diabetes, and some cancers, support proper digestive function, and keep skin, eyes, and teeth healthy (2021).

Adequate childhood nutritional habits are not only beneficial for the longevity of life and prevention of chronic disease, but also in supporting and fostering good mental health (Scaglioni et al., 2018). Polivy and Herman (2005) emphasize that adequate nutrition fosters good mental health, and the relationship is bi-directional. This means that good mental health also contributes to adequate nutrition habits, and conversely, poor mental health contributes to poor nutritional habits (Polivy & Herman, 2005). A further positive relationship can be observed between good nutrition and children's academic performance, as supported by Critch (2020). Establishing

optimal nutritional and behavioural patterns in children while they are still young is a rational approach to healthy adult futures (Critch, 2020).

The reviewed literature indicates that inadequate nutrition exerts profound consequences, affecting children across the two fundamental pillars of well-being: physical and mental health. The World Health Organization (WHO) defines physical health as the overall well-being of an individual, encompassing factors such as fitness, nutrition, and the absence of illness or disease (2022). It can involve the proper functioning of bodily systems, maintaining a healthy weight, and engaging in regular physical activity (WHO, 2022). In terms of physical health, inadequate nutrition during childhood can increase the risk of chronic diseases later in life, which as reported by the United States Centres for Disease Control and Prevention (CDC), is one of the seven behaviours that leads to premature morbidity and mortality (CDC, 2021). Children who endure consistent inadequate nutrition patterns are more likely to become overweight, which can lead to various health complications. These include breathing problems like asthma, early puberty, bone growth issues in the legs, gallstones, hip growth problems, and liver issues (Gahagan, 2011). For example, a diet high in sugary and fatty foods can contribute to obesity, which is a risk factor for conditions like type 2 diabetes and cardiovascular disease (CDC, 2021). Further, insufficient nutrition, specifically iron, can lead to anemia and affect a child's well-being by developing iron-deficiency anemia, a condition characterized by low red blood cell count and reduced oxygen-carrying capacity. This can result in fatigue, weakness, and decreased physical endurance in children (Rahman et al., 2019).

Another physical health concern related to inadequate nutrition is oral health. Insufficient intake of calcium and other minerals can result in tooth decay, gum problems, and a weakened tooth enamel (Vieira et al., 2020). Furthermore, inadequate nutrition during childhood, whether due to restricted diets, limited access to nutritious foods, or misguided dietary practices, can lead children to develop unhealthy associations with food (O'Neil et al., 2014). Eating disorders can begin to manifest during childhood or adolescence. For example, children as young as 12 may show signs of disordered eating behaviours, such as extreme pickiness, restrictive eating, or frequent dieting (Breton et al., 2022). Overall, children's well-being can become severely

impacted by this in both physical and mental ways. The US National Eating Disorders Association (2021) reports that physically, these may include nutritional deficiencies, electrolyte imbalances, growth retardation, and anemia. Rapid weight loss can also strain the heart and affect bone health (Hunter et al., 2014). Proper nutrition not only supports physical health but also contributes to overall well-being and the prevention of various health issues (World Health Organization, 2022).

Inadequate nutrition can also have profound consequences on the mental health of children. Mental health impacts noted in the literature include depression, anxiety, social withdrawal, and low self-esteem (Firth et al., 2020; Grajek et al., 2022). Furthermore, inadequate nutrition can lead to cognitive impairments in children, particularly during critical periods of brain development, as it can affect functions such as memory, attention, and problem-solving skills (Sander et al., 2021). Inadequate nutrition can also contribute to irritability and behavioural problems in children. Fluctuations in blood sugar levels due to an imbalanced diet can lead to mood swings and outbursts (Penckofer et al., 2012). Moreover, mental health issues resulting from inadequate nutrition can impair a child's ability to socialize and form relationships (National Eating Disorders Association, 2020). Children may become withdrawn, exhibit social anxiety, or have difficulty interacting with peers. This understanding underscores the critical role of nutrition in shaping children's holistic well-being encompassing physical health, mental health, and academic performance.

2.2 The Role of Early Experiences in Shaping the Formation of Children's Food Habits and Nutritional Understanding

This section highlights the vital role of early experiences in shaping children's formation of food habits, specifically impacting their lifelong eating habits and overall well-being. This can encompass attitudes, emotions, beliefs, and behaviours influenced by various factors. Early childhood is crucial in establishing food preferences and habits that can persist into adulthood, emphasizing the enduring impact of these early interactions. It is imperative to understand how children develop habits and relationships with food as it forms the foundation for their lifelong eating habits, health outcomes, and overall well-being. The literature is clear: early childhood is a

critical stage for establishing both food preferences and dietary habits (Mura et al., 2017; Nekitsing et al., 2018; Scaglioni et al., 2018). In the beginning, infants and young children rely on their caregivers for essential nutrition, including the types of foods, snacks, and meals provided, which can ultimately begin to shape their understanding of nutrition and eating habits (Mura et al., 2017). Within three or four years, children begin to establish autonomous interactions with food (Cusick et al., 2020). This relationship can include eating behaviours, and boundaries set on the food they will or will not accept (Mura et al., 2017). Importantly, this food learning journey establishes the gradual change from dependence to independence and autonomous decisions related to available food choices (Vereijken et al., 2011). Notably, this stage marks the beginning of eating behaviours that will ultimately track into adolescence and adulthood (Mura et al., 2017). Therefore, the positive and negative eating habits acquired at an early age can affect an individual throughout their entire life (Coulthard et al., 2010; Skinner et al., 2002; Vereijken et al., 2011). Ultimately, many factors contribute to children's understanding and forming of food habits, but one major area is within the school environment.

Schools: A Place Where Children Acquire Nutrition Knowledge

Nutrition knowledge is acquired in a variety of places; however, nutrition education is taught primarily in schools (Hall et al., 2016). Typically, children spend a larger part of their day in school, and in Ontario, there are often three nutritional breaks (Nielson et al., 2022). During the pivotal developmental ages of six to eleven children are in schools (Nielson et al., 2022). During this period children also develop an identity when it comes to their nutrition (Cusick et al., 2016). It has been reported that children who do not acquire proper and adequate nutrition knowledge in elementary school can have poorer food habits and poor nutrition later in life (Nielson et al., 2022). Elementary schools in Ontario wield considerable influence in imparting nutrition education and fostering food literacy among children aged 8-14 (grades 4-8), ultimately shaping their eating habits for a lifetime (Cotton 2020; Critch, 2020). The dynamics of these educational environments, shaped by interactions with peers, adults, and curriculum, significantly impact students' dietary behaviours and understandings of food, leaving a lasting imprint on their lifelong habits (Critch, 2020). Within this influential landscape, elementary schools and teachers take a prominent role in shaping children's comprehension of nutrition, as highlighted by Cotton et al. (2020).

2.3 Exploring Nutrition Education Within School Settings

The following section draws on the peer-reviewed literature to provide a summary of current research on nutrition education practices and experiences within school environments in Canada and the United States. It focuses on how schools and teachers are teaching nutrition and shaping children's formation of food habits, and the overall landscape of nutrition instruction. By delving into this research, multifaceted dimensions of nutrition education, particularly as these align with the comprehensive school health model (CSH; Joint Consortium for School Health, 2019), are reviewed. Findings from three studies are highlighted (Contento et al., 1992; Fahlman, Hall, & Gutuskey, 2013; Hall et al., 2016; 2013; Nanayakkara et al., 2022).

Schools

Promoting adequate nutrition education is crucial for fostering healthy habits, academic achievement, and critical development in schools (Critch, 2020). Educational institutions play a vital role in shaping and influencing children's dietary choices, impacting their overall health (Veugelers & Schwartz, 2010). Factors within the school environment, including cafeteria practices, the availability of nutritious food options, and specifically nutrition education programs, can lead to either positive or negative changes in students' nutrition and academic performance (Nanayakkara et al., 2022). Schools as well as nutrition education play a major role in educating and empowering children to have food-related knowledge and skills (Nanayakkara et al., 2022).

A study done in the United States by Fahlman, Hall, & Gutuskey, (2013) delved into the effects of a comprehensive health education program on students' ($n = 513$) nutrition knowledge, attitudes, and behaviours. The purpose of the study was to determine whether university classroom instruction increased self-efficacy and intent to teach health curriculum. The findings revealed that students who received the health education intervention exhibited a notable improvement in their understanding of nutrition concepts and a positive shift in their attitudes toward food. This research supports the idea that health education can serve as a powerful catalyst for promoting positive relationships with food among students. By equipping students with

nutrition knowledge, engaging them in discussions about food and eating, and empowering them to make informed choices, nutrition education programs can have a substantial impact on shaping their nutrition behaviours and promoting dietary patterns.

Effective school-based nutrition education within schools has the potential to enhance students' knowledge and foster healthier eating habits. Nevertheless, when improperly executed, such education can yield adverse effects (Contento et al., 1992). Contento et al. (1992) investigated the outcomes of a school nutrition education intervention. The study examined the effects of a poorly designed nutrition education program that focused heavily on restrictive eating and calorie counting. Students who participated in this program exhibited adverse behaviours and attitudes, such as heightened concern about body weight, the emergence of disordered eating behaviours, and a detrimental effect on their overall perspectives regarding food. This research done by Contento et al., (1992) underscores the importance of implementing school-based nutrition education with care and consideration for students' psychological and emotional well-being. Education that solely focuses on restrictive eating practices or emphasizes weight-related messages can inadvertently contribute to the development of unhealthy attitudes and behaviours towards food, leading to potential long-term negative consequences (Contentno et al., 1992). Other researchers speaking on the same topic propose that to ensure the effectiveness of school-based nutrition education, it is crucial to adopt a comprehensive and balanced approach (Nanayakkara et al., 2022).

Many methods of delivering nutrition education are analyzed in a study conducted by Hall et al. (2016). One method is experiential learning, which involves hands-on activities and interactive experiences (Hall et al., 2016). This approach allows students to actively participate in food preparation, cooking demonstrations, taste-testing, and farm visits. Another method is community-based programs which are also effective in delivering nutrition education (Hall et al., 2016). These programs utilize community resources, such as health clinics, community centres, and local organizations, to disseminate information and provide support to students to gain outside knowledge and equip them with the skills to make nutrition decisions. Digital platforms and technology-based interventions are emerging as increasingly popular approaches in nutrition education. Online resources, mobile applications, and interactive websites offer convenient and

accessible ways to deliver nutrition information (Hall et al., 2016). These digital tools provide personalized guidance, meal planning assistance, tracking systems, and educational materials, enabling individuals to access nutrition education at their own pace and convenience. However, one of the commonly used methods is classroom-based nutrition education, which will be the focus of this research. This approach involves integrating nutrition concepts into the curriculum and delivering lessons and activities that enhance students' understanding of healthy eating, food groups, and the importance of balanced nutrition. The most prominent delivery channel is classroom teachers (Hall et al., 2016).

Teachers

This section explores the existing works of literature and insights into the practices and perceptions of educators in this critical domain. Understanding teacher's experiences and perspectives on teaching nutrition to children is crucial for informing the current research. One of the most prominent methods of delivering nutrition education is through the classroom teacher, rather than an outside nutrition expert (Hall et al., 2016). Teachers exert a direct influence on children's attitudes and behaviours regarding food (Hall et al., 2016). Their knowledge, beliefs, behaviours, and teaching practices related to nutrition play a pivotal role in shaping children's comprehension and perspective on healthy eating. Teachers who incorporate engaging and interactive nutrition education in the classroom, promote positive food attitudes, and consume healthy foods can serve as role models for healthy eating and positively impact children's relationships with food (Cotton et al., 2020). By examining teachers' roles in promoting healthy eating habits and nutrition education, the existing literature offers valuable insights into the practices and perspectives of educators in this important area. Understanding the experiences and viewpoints of teachers is essential for informing current research in the field.

2.4 Documented Barriers and Facilitators to Nutrition Education (Teachers' Perspectives)

Given that teachers are facilitators of nutrition education to children, it is imperative to understand what teachers are experiencing and thinking when it comes to teaching nutrition.

Therefore, this section embarks on a comprehensive exploration of existing studies that focus on the challenges and facilitators encountered by educators in the realm of nutrition education. By synthesizing a range of scholarly works, this segment aims to report the barriers and facilitators by teachers involved in teaching nutrition within educational settings. Through an in-depth review of these studies, we delve into the complexity educators face, shedding light on the diverse obstacles impeding effective nutrition instruction and the various factors that aid in successful implementation. This exploration will offer insights into the nuanced landscape of challenges and supporting elements that teachers encounter, thus contributing to a deeper understanding of the dynamics influencing the teaching of nutrition education in schools. The following section will first explore facilitators, and then proceed with barriers to teaching nutrition education to children.

2.4.1 Facilitators to Teaching Nutrition Education

In this section, the instrumental role of teachers as primary guides in imparting nutrition education to children is illuminated, focusing specifically on the facilitators that support effective teaching practice. Teachers play a pivotal role as educators and influencers in shaping children's understanding and habits regarding food and nutrition within school environments. This is done by highlighting multiple existing studies, and their qualitative work in the field of exploring teachers' insights in teaching nutrition education. By highlighting these facilitators, we aim to underscore the indispensable role of teachers and the key factors that contribute to their effectiveness in teaching nutrition education, ultimately fostering a healthier learning environment for children.

Meaningful Roles

In the study by Hall et al. (2016), conducted in the United States, one prominent theme that emerged was the concept of 'meaningful roles' among teachers. Teachers ($n=10$) discussed their multifaceted roles, which included being educators, role models, coaches, wellness champions, and enlighteners (2016). They emphasized that these feelings of meaningful roles held significance not only for themselves but also for their students. Teachers particularly highlighted the importance of serving as role models. The teachers believed that these roles were not only

meaningful in the context of their classroom teaching but also played a vital role in nutrition education (Fahlman, Hall, & Gutuskey, 2013). They considered these roles as essential for the overall well-being and development of their students (Fahlman, Hall, & Gutuskey, 2013).

Teachers' Acknowledgment of Nutrition Education's Significance

Teachers perceive teaching nutrition as important and necessary (Hall et al., 2016). Many teachers in Hall et al., study reported that nutrition was an important topic that they believed was a necessity (2016). One major point worth noting was that teachers mentioned that all children's home environments are different and varied and all children would not receive the same nutrition education at home (Hall et al., 2016). Teachers emphasized the importance of laying the groundwork for healthy lifestyle choices in the future, particularly through nutrition education at a young age, as mentioned by Hall et al. (2016). Teachers felt a responsibility to educate children and influence their choices regarding nutrition and exercise (Hall et al., 2016). Hall et al. (2016) underscored teachers' sense of responsibility in educating and influencing children's nutritional choices and exercise habits, positioning their perception of nutrition's importance as a key facilitator in effectively teaching nutrition education. Teachers' recognition of the subject's high importance correlates with increased instructional time dedicated to nutrition education, facilitating a more positive learning environment conducive to imparting this knowledge to children (Hall et al., 2016).

External and Own Resources

When exploring the influence of teachers on nutrition education, it becomes evident through the literature that teachers often rely on external resources to enhance their understanding and delivery of this critical subject. Nannayakara et al., (2022) shed light on the pivotal role of external resources in bolstering teachers' competence and delivery of nutrition education. As noted, teachers frequently draw upon diverse external resources to augment their comprehension and effective teaching practices in this vital subject. These resources encompass a wide array of materials, including educational materials, workshops, seminars, and online platforms tailored to enhance their understanding of nutrition concepts (Nannayakara et al., 2022). It was reported that teachers use a variety of external resources to support their learning of nutrition and must access

these themselves for proper education (Nannayakara et al., 2022). Notably, teachers often proactively seek out these resources independently to supplement their knowledge base and ensure comprehensive education.

Appreciation and Feelings of Support from Stakeholders

Nannayakara et al., (2022) underscored the pivotal role of support and appreciation from various stakeholders as a significant facilitator for teachers in effectively imparting nutrition education. This encompassed support and recognition from school administrators, parents, and fellow staff members. When teachers experienced an environment where their efforts were acknowledged and valued, they reported feeling more at ease and supported in their roles. This appreciation translated into increased self-efficacy and confidence, fostering a conducive atmosphere for their teaching endeavours. Feeling supported by school administrators, parents, and colleagues not only enhanced teachers' confidence but also positively influenced their teaching efforts, creating a more nurturing and encouraging environment for nutrition education within schools.

In summary, the crucial importance of teachers in imparting nutrition education to children is emphasized in the literature (Contento et al., 1992; Fahlman, Hall, & Gutuskey, 2013; Hall et al., 2016; Nanayakkara et al., 2022). The discussion revolves around the facilitators that contribute to effective teaching practices in this context. Teachers are portrayed as multifaceted influencers, encompassing roles such as educators, role models, and wellness champions, all of which significantly shape students' behaviours and contribute to a healthy learning environment. The acknowledgment of nutrition's significance among teachers is underscored as a pivotal factor, correlating with increased instructional time and creating a positive setting for nutrition education. External resources are identified as essential tools that bolster teachers' competence, showcasing their proactive approach to knowledge enhancement. Furthermore, the section emphasizes the critical role of appreciation and support from stakeholders in fostering teachers' confidence and self-efficacy, positively impacting their teaching efforts and cultivating nurturing environments for effective nutrition education in schools.

2.4.2 Challenges in Teaching Effective Nutrition Education Curriculum

The forthcoming segment delves into the multifaceted barriers impeding effective nutrition education, drawing insights from peer-reviewed literature and studies that have meticulously explored teachers' perspectives on these challenges. This section aims to elucidate the significant impediments encountered by educators in delivering comprehensive and impactful nutrition education. The following research studies: (Cotton et al., 2020; Hall et al., 2016; Nanayakkara et al., 2022; Yager et al., 2009) serve as pivotal references, shedding light on the considerable obstacles faced by teachers in imparting robust nutrition education.

Nutrition Knowledge Expected of Teachers

It is crucial to recognize that while nutrition knowledge is often expected and assumed, it is not necessarily guaranteed that teachers have specialized training in this area, as highlighted by Yager et al. (2009). In many cases, there is a lack of comprehensive nutrition education in teacher training programs, leaving educators ill-prepared to address the complex and multifaceted issues surrounding nutrition, eating behaviours, and body image in the classroom. As noted by Cotton et al. (2020), “Elementary school teaching staff do not have access to appropriate resources and may not have the expertise, motivation or capacity to deliver evidence-based nutrition education” (pp. 3). However, these sensitive topics require a nuanced approach that takes into consideration the diverse backgrounds, experiences, and beliefs of students. Without the necessary knowledge and skills, teachers may inadvertently perpetuate misconceptions or engage in practices that are not conducive to promoting a healthy relationship with food and body (Yager et al., 2009).

Time

In a phenomenological study done in the United States conducted by Hall and colleagues (2016), teachers described their experiences with nutrition education and identified several barriers that impacted its effectiveness. One significant theme was the lack of time. Teachers expressed that the allocated time for the curriculum was insufficient, and the structured format including short periods, with limited discussion periods, limited their ability to adequately teach the entire curriculum (Hall et al., 2016). Additionally, teachers reported receiving the program guide shortly before the intended teaching time, highlighting a lack of sufficient time for preparation (Hall et al., 2016). In a study exploring ways to improve secondary school teachers' confidence

in teaching food and nutrition subjects, Nanayakkara et al. (2022) found similar findings. Teachers within this study emphasized the need for adequate time to both learn and study the material themselves before delivering effective nutrition lessons and more time allocated to teaching nutrition as a "lack of instructional time" was identified as a significant reason hindering effective nutrition education (Nanayakkara et al., 2022). Overall, the research findings consistently highlight the barrier of limited time as a significant challenge in implementing effective nutrition education programs. Teachers express the need for more time to thoroughly cover the curriculum, adequately prepare teaching materials, and enhance their knowledge and confidence in teaching nutrition-related subjects.

Subject Prioritization

Another prominent barrier identified in the research pertains to the prioritization of core subjects over nutrition education. Hall et al. (2016) found that subjects like math and literacy, which are subject to standardized testing, were given higher priority compared to nutrition education, so when faced with limited time and resources, teachers tended to prioritize math and literacy over nutrition (Hall et al., 2016). This finding is echoed in the study conducted by Nanayakkara et al. (2022), where some teachers suggested that nutrition subjects should be made compulsory to increase awareness and proclaim its significance. Overall, the research reveals a recurring theme of core subjects taking precedence over nutrition education due to various factors, including standardized testing and resource constraints.

Self-Efficacy of Teachers

Since many teachers do not possess a background or formal training in nutrition, their self-efficacy and confidence in delivering nutrition programs tend to be low (Nanayakkara et al., 2022). A study conducted by Fahlman, Hall, & Gutuskey, (2013) examined teachers' perceptions of teaching nutrition after participating in a pre-training course. The results revealed that the provision of a pre-training course significantly increased self-efficacy, which, in turn, led to an increase in the time spent teaching nutrition. These findings align with those of Hall et al., (2016) who also reported that higher self-efficacy among teachers was associated with a greater likelihood of incorporating nutrition instruction. Nanayakkara et al. (2022), also highlighted that many teachers mentioned professional development opportunities to enhance their confidence in

teaching nutrition programs. The lack of access to professional development courses and educational resources specifically focused on teaching nutrition emerged as a reported barrier by teachers.

Lack of Understanding

Teachers in a study conducted by Nanayakkara et al. (2022), noted that they felt a lack of information or sense of understanding as they were not being updated on the new current trends and food knowledge related to nutrition. The teachers reported that if there were blogs, resources, or collaborating networks to talk about these trends, their perceptions of their confidence would benefit the students in better understanding nutrition and teaching it.

In summary, the literature consistently points to the food and nutrition knowledge gaps among teachers and the subsequent impact on their self-efficacy and confidence in delivering nutrition education. Studies suggest that targeted pre-training courses and professional development opportunities can positively influence teachers' confidence and competence in teaching nutrition. Addressing the lack of formal education and professional development in nutrition for teachers becomes crucial in overcoming these identified barriers. However, while teachers play a significant role in children's learning about nutrition, it is important to acknowledge that they are not the sole influence on children's relationship with food. The social and cultural environment also acts as a barrier for not only teachers but also impacts children's relationship with food.

2.5 Social, Physical, and Cultural Environments in the School

This section examines the literature surrounding the impact of diet culture, peers, and families on children's relationships with food and body image. It delves into the societal norms, media influences, and interpersonal dynamics that contribute to fostering unhealthy attitudes toward food and body image among children within the school environment. These pervasive influences from societal and media-driven expectations can perpetuate distorted views of body image, leading to disordered eating behaviours and body dissatisfaction among young individuals. Eating in childhood is thought to be influenced by multiple figures, the most significant of these being friends, peers, and parents (Aparicio-Martinez et al., 2019). Within the framework of the comprehensive school health model, which emphasizes various factors influencing children's well-being in the school environment, the social and physical environments emerge as a core determinant shaping children's attitudes towards food. The addition of parent influence has been added in this section, as parents are tremendous influences on their children and there is a bi-directional relationship in imparting information to the child between home and the school.

Diet Culture

In the context of factors that can influence children within the comprehensive school health model (CSH: Joint Consortium for School Health, 2019), one significant factor is diet culture. Diet culture refers to a set of beliefs, practices, and societal norms that prioritize thinness, weight loss, and restrictive eating patterns as indicators of health and worth (Jovanovski & Jaeger, 2022). Children in Ontario schools are exposed to a range of influences that perpetuate diet culture, including media representations, advertising, and social media platforms that often promote unrealistic body ideals and reinforce the notion that certain foods are "good" or "bad." These messages can create a toxic relationship with food, leading to feelings of guilt, shame, and an unhealthy preoccupation with body image. Past literature has examined the high value placed on being thin and fit within our society; the pervasiveness of these messages has become so ingrained that those as young as seven years of age have developed both body image concerns and restrictive dieting (Aparicio-Martinez et al., 2019).

Diet culture also manifests within interpersonal relationships--family dynamics, peer interactions, and school environments (Islam et al., 2019). Well-intentioned comments about food choices, body shape, or weight can inadvertently contribute to the development of negative attitudes toward food and body image in children. Additionally, the pressure to conform to societal beauty standards and the fear of being judged based on appearance can significantly impact children's relationship with food, with many children in Ontario schools reporting dissatisfaction with their bodies (Aparicio-Martinez et al., 2019). Aparicio-Martinez et al., (2019) and colleagues report that these same children are engaging in weight loss behaviours such as eating less and exercising to lose weight. Without proper education on nutrition, these habits will likely continue into adulthood (Aparicio-Martinez et al., 2019).

Family

A strong body of research has identified the influences of parents on children's eating attitudes and behaviours (Scaglioni, Salvioni, & Galimberti, 2008), as mothers and fathers are responsible for most feeding interactions that their young children experience (McHale et al., 1995). The 'normative model of eating' (Herman et al., 2003) proposes that eating behaviour is influenced by specific norms within social settings, particularly regarding the eating habits of others and the perceived importance of social approval. Studies involving experiments and diary records on social facilitation generally indicate that individuals tend to consume more when in the company of others compared to eating alone (Patel & Schlundt, 2001). Moreover, this tendency appears more pronounced when eating with a spouse or family members (De Castro, 1994). Parental factors can be influenced by attitudes, knowledge, culture, lack of time, socioeconomic status, and many more factors.

The affordability of food also represents a significant hurdle for families, influencing their choices towards healthier options. Research consistently demonstrates that numerous parents opt for inexpensive, high-energy but less healthy food items, especially among those from low-income households (Lui et al., 2021). Existing literature extensively acknowledges the correlation between socioeconomic status and the quality of one's diet (Burge et al., 2012). Also, work and academic obligations can restrict families' opportunities to maintain healthy eating habits (Lui et al., 2021). Additionally, this review indicated a correlation between extended parental work hours and the likelihood of adolescents having unhealthy family meals, leading

working parents to prefer fast or prepackaged food instead of home-cooked meals after work (Lui et al., 2021).

When it comes to role modelling, parents have a major impact on imparting behaviours to their children (Mahmood et al., 2020). Various studies reported a great influence of parents' dietary habits and behaviours influencing children regardless of demographic characteristics including age, gender and socioeconomic status (Mahmood et al., 2020). Among the various factors shaping children's dietary habits, family mealtime emerges as a primary social context where kids can eat with their parents, who serve as their key role models (Mahmood et al., 2020). The positive impact of sharing meals with children, regularly having breakfast together, and encouraging healthy snacks with moderate restrictions is evident in promoting healthier dietary behaviours among children (Mahmood et al., 2020). Real-world studies align with the idea that children's preferences and eating habits predominantly mirror the foods they become familiar with, emphasizing the significance of external influences on their dietary choices (Savage et al., 2007). As well, studies suggest that the presence, accessibility, and availability of fruits and vegetables at home are positively correlated with the consumption levels of these foods among school-age children (Mahmood et al., 2020).

Another interesting note is the type of parenting when it comes to food and eating. Parenting practices and interactions during feeding can significantly influence children's autonomy in eating, affecting their food preferences, intake patterns, diet quality, growth, and weight status (Savage et al., 2007). However, it is crucial to acknowledge that certain child-feeding practices may inadvertently have negative effects. For instance, attempts to increase children's intake of nutrient-dense foods or restrict access to unhealthy options may lead to unintended consequences, impacting children's food preferences and self-regulation of energy intake (Savage et al., 2007). Parental control, particularly through restrictive feeding practices, is generally associated with overeating and poorer self-regulation of energy intake in preschool-age children (Savage et al., 2007). The impact on eating behaviour varies based on the nature of the directive; using food as a reward can increase preferences for certain foods, potentially promoting unhealthy choices (Savage et al., 2007). Even efforts to reward children for consuming healthy foods may backfire, as research indicates that it can result in children developing aversions to those foods (Savage et al., 2007).

Peers

Another influence for children is their peers and friends. While there is compelling evidence highlighting how parents impact children's eating habits, a research study analysis suggests a focus on peers and their role in shaping children's eating behaviours (Wang, Beydoun, Li, & Moreno, 2011). As reported by Houldcroft (2013), children perceive their friends as important role models for the formation of attitudes as well as behaviour. Numerous studies have focused on the understanding of how peers and friends impact children's evolving eating behaviours as well as attitudes towards food. As children advance through childhood and their school years, they gain more independence, leading to increased interaction time with peers and friends (Lam et al., 2014). Moreover, this interaction tends to become less monitored or supervised by parents (Gifford-Smith & Brownell, 2003). As children interact with peers and friends during school meals and possibly in other eating scenarios beyond school, these social connections are presumed to shape children's dietary choices. It might also be speculated that children are prone to imitate the eating habits of peers or friends whom they regard as having higher status or influence, as indicated in prior studies utilizing peers portrayed as heroes (Horne et al., 2004).

Through social network analysis, studies have revealed that adolescent girls often mirror body image concerns, dietary restrictions, and weight-loss practices observed within their friendship circles (Paxton et al., 1999). Similarly, research among late childhood participants (aged 8-11 years) by Farrow et al. (2011) demonstrated comparable outcomes, showing a significant correlation between children's (both boys and girls) tendencies for dietary restraint, dissatisfaction with their bodies, and external eating patterns, aligning with those peers within their friend groups. This implies that children's food behaviours and perceptions are influenced by their associations and interactions within these social networks.

In conclusion, this section thoroughly explores the literature on how societal norms, diet culture, family dynamics, and peer influences significantly impact children's relationships with food and body image. Within the comprehensive school health model, the social and physical environments emerge as a core determinant shaping children's understandings and attitudes towards food. Diet culture, pervasive through media and interpersonal interactions, perpetuates distorted body image and disordered eating behaviours among children. Moreover, family dynamics play a crucial role, particularly in shaping eating behaviours through social modelling and shared meals. Parents, significantly influence children's eating attitudes and behaviours, while peers and friends also play a crucial role as influential models during

childhood and adolescence. Peers' eating behaviours and body image concerns within social networks tend to influence children's dietary choices and attitudes toward food.

Summary

The first part of this chapter has drawn on existing literature, to underscore the crucial role teachers play as educators and role models in shaping children's comprehension of nutrition and common factors impacting teachers' abilities to deliver nutrition education cited in the literature. While teachers recognize the significance of nutrition education, they encounter challenges such as limited time, inadequate resources, and insufficient training that hinder their effectiveness in imparting this knowledge. Moreover, societal influences like diet culture and family dynamics significantly impact children's attitudes toward food and body image. Peers also wield considerable influence, shaping dietary choices and perceptions. Nurturing healthy eating habits among children and adolescents through nutrition education is a complex task. The literature draws attention to some recurring societal norms perpetuating unhealthy relationships with food, and elements needed to support healthy eating habits among children and adolescents. Understanding how such factors emerge, impact teachers' day-to-day experiences teaching nutrition to specific groups of children, and are best addressed in specific environments, does require context-specific research.

Part II

2.6 Current Ontario Nutrition Education

Ontario schools adhere to a "healthy active living" curriculum, which encompasses both physical literacy and health literacy components (Ontario Ministry of Education, 2019). Specifically, within Ontario's curriculum, nutrition education is integrated to promote a comprehensive understanding of health and well-being, empowering students with the knowledge and skills necessary to make healthy choices and lead active lifestyles (Ontario Ministry of Education, 2019).

Last revised in 2019, the Health and Physical Education Ontario Curriculum for grades 1-8 spans 303 pages with appendices and is structured to aid in creating lessons and planning in health and physical education (Ontario Ministry of Education, 2019; Joint Consortium for School Health, 2019). This document is divided into sections corresponding to grades 1-3, 4-6, and 7/8, with each section organized under four strands: A) Social and Emotional Learning Skills, B) Active Living, C) Movement Competence, Skills, and Strategies, and D) Healthy Living. Strand D of the curriculum addresses five health topics, including healthy eating, personal safety and injury prevention, substance use, human development and sexual health, and mental health literacy (Joint Consortium for School Health, 2019). The focus of this project connects to one of the topics within Strand D: Healthy eating.

The number of pages dedicated to Healthy Eating is less than 1 for each grade component. The limited number of pages dedicated to healthy eating in the curriculum indicates a lack of depth and resources for both teaching and learning this essential subject. This highlights potential challenges for teachers in delivering comprehensive nutrition education and for students to adequately learn healthy eating habits.

There are six specific components or facets educators are expected to integrate into nutrition education in Ontario, as per 2019 guidelines (Ontario Ministry of Education, 2019). These are:

1. **Healthy Eating:** The curriculum emphasizes the importance of healthy eating habits and encourages students to make nutritious food choices. Students learn about the various food groups from the updated food guide, the nutritional value of different foods, and the benefits of maintaining a balanced diet.

2. **Food and Nutrition Literacy:** The curriculum aims to develop students' food and nutrition literacy by enhancing their understanding of food labels, portion sizes, meal planning, and the impact of food choices on overall health. Students learn how to interpret and evaluate nutritional information to make informed decisions.
3. **Personal and Social Responsibility:** The curriculum focuses on helping students develop personal and social responsibility concerning nutrition. This includes fostering positive attitudes towards food, promoting mindful eating practices, and considering the environmental and cultural aspects of food choices.
4. **Food Safety and Handling:** Students learn about proper food safety and handling practices, including the importance of hygiene, safe food storage, and prevention of foodborne illnesses.
5. **Healthy Living and Active Lifestyles:** The curriculum promotes the connection between nutrition and physical activity. Students explore the relationship between healthy eating and active living, understanding how proper nutrition supports physical performance and overall well-being.
6. **Equity and Inclusion:** The curriculum recognizes the importance of promoting equity and inclusion in nutrition education. It encourages students to explore diverse food traditions, cultural practices, and individual dietary needs while fostering respect and understanding for different food choices.

Educators tasked with delivering nutrition content are expected to expose their students to various topics related to nutrition, such as the importance of balanced diets, food groups, meal planning, and making informed food choices (Ontario Ministry of Education, 2019). Key skills the curriculum aims to have students acquire in the process include learning about the nutritional value of different foods and developing skills to assess and interpret food labels.

Healthy eating within the curriculum is approached more as a concept rather than being explicitly defined. Notably, the term "healthy eating" appears frequently within the curriculum paragraph, occurring four times, yet lacks clear definitions or nuanced guidance on terminology usage (Ontario Ministry of Education, 2019). Instead, the prompts tend to guide educators toward activities and discussions aimed at encouraging students to explore and adopt behaviours

that align with perceived healthful choices Throughout the teacher prompts for healthy eating, which range from 3 to 5 in number, there's a consistent emphasis on depicting what is deemed beneficial and optimal for students' health (Ontario Ministry of Education, 2019). Moreover, while the curriculum allocates 30 percent of instructional time to health education, it does not offer sufficient clarity on how to effectively cover topics like healthy eating within this timeframe, potentially limiting opportunities for comprehensive learning. This lack of explicit definition may leave room for interpretation and potentially limits the depth of understanding for both educators and students regarding the principles of healthy eating.

The Health and Physical Education Curriculum focuses on “healthy, and unhealthy messaging” (Ontario Ministry of Education, 2019, pp.40). The following exemplifies this messaging within the D2 strand of the curriculum:

healthy eating- This component of the Healthy Living strand equips students with the knowledge and skills they need to make the healthiest eating choices they can. Students learn to examine their own food choices and eating patterns and develop personal guidelines for healthier eating while working within parameters that they can control. Major topics include Canada’s Food Guide, nutrition, food choices, and factors influencing eating habits (Ontario Ministry of Education, 2019, pp.40).

Using words that promote both healthy and unhealthy eating while having students uniformly assess their habits neglects each student’s diverse context and social determinants of health at play (Capozzi, 2022). As each child can experience different lifestyles, cultures, or social determinants of health, it makes it challenging to frame certain foods, eating habits, or family eating styles as healthy or unhealthy. Discourses surrounding health that categorize food into good/bad food may have negative consequences, including disordered eating and eating disorders (Welch et al., 2012). This issue is compounded by the curriculum's minimal guidance and lack of sensitivity regarding these factors, underscoring the need for more educational resources in nutritional education.

At the outset of strand D of the Health and Physical Education curriculum, there is a statement emphasizing the relevance of equity:

“The Ontario Equity and Inclusive Education Strategy focuses on respecting diversity, promoting inclusive education, and identifying and eliminating discriminatory biases, systematic barriers and power dynamics that limit the ability of students to learn, grow

and contribute to society. Antidiscrimination education continues to be an important and integral component of the strategy.” (Ontario Ministry of Education, 2019, pp. 75)

There is no elaboration on why these matter for healthy eating, or what best practices might look like. Specific guidance on addressing equity and inclusion for children within the classroom when addressing subjects such as healthy eating is lacking.

The curriculum on "healthy active living" integrates nutrition education to promote a comprehensive understanding of health and well-being among students. While the curriculum emphasizes various aspects of nutrition, including healthy eating habits, food literacy, and the connection between nutrition and active lifestyles, there is a notable lack of depth in the resources dedicated to healthy eating. Despite the curriculum's focus on promoting equity and inclusion, specific guidance on addressing diverse contexts and social determinants of health concerning healthy eating is lacking.

The Ontario "healthy active living" curriculum integrates nutrition education, aiming to empower students with knowledge and skills for healthy choices and active lifestyles. However, the curriculum lacks depth in healthy eating resources, with less than one page dedicated to the topic per grade level. While six key components of nutrition education are outlined, the curriculum's approach to healthy eating lacks explicit definitions and nuanced guidance. Moreover, the curriculum's focus on both healthy and unhealthy messaging without considering individual contexts and social determinants of health may contribute to challenges such as disordered eating, and relationships with food. Additionally, while the curriculum emphasizes equity and inclusion, specific guidance on addressing these aspects in nutrition education is absent, highlighting the need for more comprehensive educational resources. This study aims to gather insights into teachers' experiences with the curriculum's approach to nutrition education and its impact on children, with the goal of identifying resource gaps and potentially aiming to compliment revisions or advocating for new ones within the existing curriculum, to better support educators and students.

Chapter 3

3.0 Research Design, Methodology, and Methods

The upcoming chapter will detail the methods and methodology employed to address the research aims and the study's purpose (Section 3.1). I will provide an overview of the qualitative approach employed, including core ontological and epistemological assumptions (Section 3.2), and describe the methods of data collection, namely semi-structured interviews (Section 3.3), followed by discussions on sampling, recruitment, and data collection. Section 3.4 outlines the quality criteria that were used to guide this research. Furthermore, I will address reflexivity and positionality. Finally, ethical considerations, approval, and funding in Section 3.5.

3.1 Study Purpose

The primary purpose of the study was to investigate the impact of nutrition education on children in grades 4-8 from the unique perspective of teachers. By examining how teachers perceive and deliver nutrition lessons, and the impact this education has on children, we aim to gain a deeper understanding of teachers' experiences teaching nutrition education, and the perceived impact it may have on children. The research aims are:

Research Aims:

- To explore teachers' personal experiences of teaching nutrition education to elementary-aged children (grades 4-8).
- To explore teachers' perceived understanding of how practices and activities within schools impact students' nutrition education and well-being.

3.2 Qualitative Paradigm: Ontological and Epistemological Assumptions

Defining the project's paradigmatic perspective holds significant importance within qualitative research, particularly when it comes to selecting an appropriate methodology (Guba & Lincoln, 1994). The chosen paradigm essentially serves as a guiding force in shaping the researcher's

methodological choices and influencing the interpretation of gathered data (Guba & Lincoln, 1994; Teherani et al., 2015). In my capacity as a qualitative researcher, my perspective strongly aligns with a relativist ontology, acknowledging the existence of multiple perspectives and realities in the world.

Epistemology “refers to theories of knowledge and perception in science” (Guba & Lincoln, 1994). I adhere to an interpretivist epistemological approach that posits reality as subjective and multiple and therefore the way to apprehend this reality is subjected to interpretation, emphasizing the relational nature of research between the researcher and participants (Guba & Lincoln, 1994). Within this research, epistemology refers to how the production of scientific knowledge using interview research should be conceived and understood. Specifically, referring to the way the methodology is understood, including the roles of both the interviewer and interviewee shows how this research adopts a constructivist epistemology, viewing interviewing as a collaborative knowledge-building process. Situated within the interpretive tradition and using a constructivist paradigm, it acknowledges the co-construction of knowledge between researchers and participants, recognizing the subjective nature of reality shaped by social and cultural contexts (Ponterotto, 2005), particularly within educators' experiences in teaching nutrition and children's nutrition literacy.

As a researcher and interviewer, my approach involved fostering an environment where educators feel comfortable sharing their experiences authentically. Through open-ended questioning and active listening, I aimed to delve deeper into their stories, perspectives, and emotions regarding teaching nutrition. By carefully documenting these narratives and thematically lived experiences, I attempted to showcase the richness of these accounts, emphasizing the impact of teaching practices on students' understanding of food. This thematic representation was intended to capture not just factual data but also the nuanced aspects of teachers' experiences, feelings, and perceived influence on students, allowing for a comprehensive understanding of the complex dynamics involved. Through this narrative-driven approach, I aimed to illuminate the intricacies of teaching nutrition, emphasizing the human aspect, and lived realities within the educational context. This paradigm offers a robust framework to investigate teachers' perceptions and allowed for an exploration of the complex dynamics involved in children's understanding of nutrition within the

school context.

3.3 Methods of Data Collection: In-Depth Semi-Structured Interviews

Qualitative methods, particularly in-depth interviews, were used in the current study to facilitate a nuanced understanding of teachers' perspectives, allowing them to articulate their thoughts, feelings, and experiences in their own words (Pope & Mays, 2020). By adopting a semi-structured interview approach, the aim was to delve deeply into the complex and subjective aspects of teachers' encounters with the curriculum, emphasizing the importance of capturing the depth and breadth of their experiences, as well as the contextual factors influencing their views. A less structured interview guide allowed the participant to speak freely while allowing room for open discussion without a strict guide (Pope & Mays, 2020). Essentially, this allowed for the production of new responses, themes and ideas providing opportunities to learn answers to questions, while also opening the floor to new issues not anticipated (Pope & Mays, 2020). In short, this methodology enabled a comprehensive examination of the phenomenon under investigation, shedding light on the multifaceted nature of teachers' interactions with the curriculum and its implications for children's nutrition education. The current study's interview guide can be found in Appendix C.

3.3.1 Participant Recruitment and Sampling

Participants for the research study were recruited using a two-fold approach. The first approach uses a purposive criterion sampling method (Palinkas et al., 2015). Specifically, the initial participants recruited by the researcher were via personal email or personal phone, with the recruitment poster. This is available in Appendix E. These selected participants were known by the research team through being a teacher previously, or a connection from work. The rationale behind this initial approach was to select participants who had experienced the phenomena of delivering nutrition education in Ontario to elementary-aged students in the last 5 years, and who were aware of the need for this research. Moreover, the use of purposive sampling of the initial participants helps to create a homogenous sample of participants who have all experienced teaching nutrition to children and the phenomena of teaching nutrition education. In addition to

purposive sampling, the second approach to recruit participants used snowball sampling (Chaim, 2008) This sampling technique was used whereby the researcher purposively selects a participant based on the eligibility criteria and asks the participant to assist in recruiting other potential participants with similar experiences surrounding the phenomena being researched.

After the initial recruitment, interested participants were directed from these two avenues to email the secure inbox of the primary researcher (AV). From this email, the participants were instructed to review the eligibility criteria, and from here an online eligibility survey was provided within the email chain. This Qualtrics survey can be viewed in Appendix B. Proceeding the online survey, the participants were emailed a letter of information (LOI), which contains the consent form. To view the Qualtrics consent form please see Appendix F. From here, the identifying information was used on a single tracking document and to be contacted by the researchers in the study to set up an interview time slot which worked for both the participant and the researcher.

I endeavoured to collect a representative sample of teachers teaching different grades and from various geographical locations in Ontario. The recruitment process ran smoothly and resulted in the recruitment of 13 participants. More importantly, this number has been deemed sufficient for qualitative analysis and the scale of this study, as reported by qualitative experts (Braun & Clarke, 2013; Flick 1998). Theoretical saturation was the endpoint of data collection I aimed for 13 as saturation is thought to be achieved by 9-11 interviews. (Flick, 1998). While the sample size may seem relatively small, qualitative work focuses on depth rather than breadth of data. With a smaller sample size, I dedicated sufficient time and attention to each participant, enabling a thorough exploration of their perspectives and insights. This approach ensured rich and nuanced data that provided valuable insights into the research questions and contributed to a comprehensive analysis.

3.3.2 Eligibility Criteria for Participants

To participate in the research study, there were specific requirements that must have been met. The first requirement was that the participant had experienced the phenomena of teaching

nutrition education in Ontario in the last five years. The importance of this requirement was to ensure that the participant had experienced this phenomenon recently, and in Ontario ensuring that the information collected is of a timely and relevant nature to the current climate of nutrition education and the ever-changing nature of the curriculum. As well, the last time the curriculum was updated was 2019, making the last five years the most recent curriculum. The second eligibility criterion was that the participant taught the nutrition curriculum to elementary-aged students ranging from 8 years of age (grade 4) to 14 years of age (grade 8). The rationale surrounding this was to understand the lived experience of teaching more in-depth and specific nutrition to children versus kindergarten-age students. This requirement was to ensure the teacher had taught a breadth of nutrition curricula to elementary-aged students. As well eligibility criteria required that the participant was a publicly funded teacher, and spoke English.

3.3.3 Data Collection Process

Initial Survey

The initial survey was used to ensure eligibility criteria. The identifying information was exclusively utilized in a distinct tracking document, completely segregated from all other data, guaranteeing utmost anonymity and confidentiality. The attached initial survey can be found in Appendix B. Following the eligibility criteria survey, if the participant met the requirements to participate, the primary researcher emailed the participant the letter of information LOI and link to the consent form in Qualtrics. Proceeding with this, the participant was emailed with the next steps of organizing an interview time.

Interviewing Process Specifics

Semi-structured interviews were conducted online via Zoom and Teams, both of which are secure online video services (Pope & Mays, 2020). The length of the interviews was scheduled from 60 to 90 minutes. The interviews were scheduled around the participant's availability and convenience and typically occurred in the evenings after teaching hours. The interviews were done online to alleviate any added stress of commuting, locating a meeting point and adding additional time to the participant's plates.

3.3.4 Data Analysis Plan

To analyze the qualitative data produced by the interviews, an iterative thematic analysis (Renjith et al., 2021) was conducted by the principal investigator (AV), in dialogue with her supervisory committee. This approach of thematic content analysis reduces potential researcher bias that might arise through directed thematic analysis and allows the data, coding, and common themes to be identified inductively from transcripts (Pope & Mays, 2020). While attentive to potential unique contributions made by interviews, the researcher (AV) aimed to discover recurring patterns across the data sets (Renjith et al., 2021). The online data analysis computer software NVIVO was used to organize and support the analysis of the qualitative data.

The first step in the process of data analysis entailed verbatim transcribing of all interview data. From here, each interview was coded freely and separately (Renjith et al., 2021). Each transcript was annotated separately whereby the primary researcher (AV) conducted line-by-line analysis labeling relevant words, phrases, sentences, and sections with codes (Green & Thorogood, 2014). An iterative approach was used where the primary researcher (AV) went back and forth between the transcript and the analysis to identify data types and patterns (Green, & Thorogood, 2014; Renjith et al., 2021). These specific annotations were colour labelled per transcript. The primary researcher was attentive to patterns that could be related and coded in similar themes, as well as opposing themes (Green, & Thorogood, 2014; Renjith et al., 2021). Continuous alongside data collection, an ongoing line-by-line interpretive analysis revealed anecdotes, major themes, and implicit meanings within the interview transcripts (Green, & Thorogood, 2014; Renjith et al., 2021). Once each transcript had been annotated separately, the data from each transcript was conceptualized, whereby the primary researcher aligned the data from each transcript and codes critical themes, representative of the whole data corpus (Green, & Thorogood, 2014). Categories and subcategories were created by grouping codes created from the original annotation. At this time, codes were combined or eliminated based on the data recorded (Green, & Thorogood, 2014). Next, the themes and codes were analyzed and written in a hierarchal nature based on the lived experiences produced by the participants (Green, & Thorogood, 2014).

3.4 Quality Criteria

To ensure I produced quality qualitative research I employed Tracy's (2010) "Qualitative Quality: Eight 'Big-Tent' Criteria for Excellent Qualitative Research". This presents a framework that underscores the importance of several critical aspects of qualitative research. These eight criteria emphasize key elements like worthy topics, rich rigour, sincerity, credibility, resonance, significant contribution, ethical considerations, and meaningful coherence (Tracy, 2010). In my research, I employed Tracy's Criteria to enhance the quality and validity of my qualitative work.

For example, I ensured my research explored a worthy topic (Tracy, 2010), one that holds significance in the context of nutrition education and its impact on children's well-being. To maintain sincerity, I was honest and transparent about my intentions and biases throughout the research process by being reflective and honest to participants. Additionally, I strived to produce research that resonated with both the academic community and practitioners in the field, contributing to the overall body of knowledge regarding nutrition education. Ethical considerations were paramount in the work, ensuring that the rights and well-being of participants were protected as this study was approved by the Western University Health Science Research Ethics Board (ID 123154). Lastly, I ensured that my research maintained meaningful coherence, with a clear structure, well-defined objectives, and a logical flow of ideas. By incorporating these criteria, I conducted research that meets high standards of quality and validity in the realm of qualitative inquiry.

3.4.1 Reflexivity & Positionality

Reflexivity was a critical component of this qualitative research, encompassing self-awareness and self-examination of the researcher's influence on the research process (Guillemin & Gillam, 2004). In qualitative research, particularly when exploring topics like nutrition education and children's eating habits, reflexivity was essential for acknowledging and addressing the potential biases and subjectivity that researchers brought to the study. Specifically, as noted in my personal motivations, having a personal connection to the research topic amplified the significance of reflexivity and unbiased exploration. My personal motivations and connection to the subject underscored the necessity for heightened self-awareness and continual self-examination

throughout the research process. Recognizing my vested interest in nutrition education and children's eating habits, it became even more crucial to actively address and mitigate potential biases that could influence the study's outcomes. By embracing reflexivity, I aimed to navigate my connection responsibly, ensuring that my involvement did not compromise the integrity or objectivity of the research findings. This deliberate introspection enabled a more nuanced understanding, fostering a research environment driven by impartiality and rigorous exploration.

In my research, reflexivity informed how I proceeded in several ways. First, I continuously assessed my preconceptions. As a health studies student with prior knowledge of nutrition, eating behaviours, and a holistic approach to health, I acknowledged that my background might shape my perspective. To mitigate any potential biases, I maintained a heightened awareness of how my prior knowledge and beliefs could influence my data interpretation and interactions with participants. This self-awareness enabled me to approach the research with an open mind and to critically reflect on how my own experiences might intersect with the experiences of the participants. I reflected on moments when teachers did not express a food-neutral approach in their classrooms, recognizing the importance of holding back personal biases and maintaining objectivity in my analysis. My cultural background also informed my perspectives as a researcher. Specifically, my Italian cultural background, characterized by the significance of communal meals and using food as a tool for bonding, enhanced my perspectives and views. This cultural lens heightened my sensitivity to the social and emotional aspects of nutrition education. Recognizing this when I engaged with the participants, transcribed interviews, and analyzed data, I continually contemplated my role as a researcher and the potential biases or influences that I brought to the study. For instance, as an individual with an Italian background where food was celebrated openly, I had to consider how my cultural perspective might influence my interpretations of teachers' attitudes towards food in the classroom. Such reflexivity was instrumental in promoting methodological rigour and enhancing the authenticity of the findings.

Additionally, it was important to acknowledge that some of the participants in the study might have been individuals I knew personally from a decade ago when I was a student in the same school or when they served as my teachers. This prior acquaintance potentially introduced a unique challenge in remaining unbiased. To address this, I implemented strategies to ensure

objectivity and fairness throughout the research process. Firstly, I adopted a professional stance and emphasized the significance of confidentiality. All participants, including those I might know, were assured that their responses would be treated with the utmost respect and privacy. I made a conscious effort to separate my past relationships from my current role as a researcher, refraining from making assumptions or allowing prior interactions to cloud my judgment. Furthermore, I employed reflexive journaling to document any personal biases, emotions, or assumptions that arose during the research process. Regularly revisiting these reflections enabled me to recognize and challenge my own potential biases and ensure that the research remained impartial and focused on the participants' experiences. By actively engaging in reflexivity and employing these strategies, I was committed to maintaining objectivity and rigour in my research, even when participants had connections to my past experiences.

Field notes were diligently crafted immediately following each interview session to capture nuanced details, impressions, and contextual observations. These notes also served as a foundation for reflexivity, enabling introspection and critical self-awareness. After each interview, I took stock of and recorded key takeaways from the interview, potential personal biases playing a role in these impressions of the interview content, and potential influences on my interaction with the participant.

3.5 Ethical Approval

This research project obtained ethical clearance from Western University's Health Sciences Research Ethics Board (Project ID 123154) before commencing participant recruitment and data collection. The official ethical approval document can be found in Appendix D. Furthermore, the thesis study researcher Ashley received financial support from SSHRC, a Canadian Graduate Scholarship.

Chapter 4

4.0 Results

In this chapter, I will share key findings derived from my analysis of the data gathered through 13 interviews. To begin, I will delve into the characteristics of the individuals who participated in the study (Section 4.1). Next, I will proceed to examine the primary discoveries derived from the analysis of the semi-structured interviews (Section 4.2). Throughout, the themes are supported by direct quotations from the participants.

4.1 Participant Demographics

Thirteen participants consented to and participated in the study. All participants were elementary school teachers in Ontario who had taught nutrition in the last five years. More specifically, there were 5 junior teachers which are grades 4-6 and 8 intermediate teachers which are grades 7 and 8. There were 6 teachers who taught in a public school board whereas 7 teachers taught in a Catholic school board. The participants taught at various school boards in Ontario including the geographic locations of Huron Perth, London Middlesex, Waterloo Wellington, and Toronto District (details regarding participant demographics are outlined in Table 1). As previously noted, recruitment strategies employed word of mouth, as well as recruitment posters posted online to social media. Consequently, we lack the ability to gauge the study's viewership and compute a response rate. Nonetheless, within the cohort that showed interest and enrolled via Qualtrics, we attained a complete participation rate of 100% for the interviews.

Table 1: Demographics of Study Participants (N = 13)

Participant Characteristics	n (%)
Age (years)	
30-39	1 (7%)
40-49	6 (46%)
50-59	5 (38%)
60-69	1 (7%)
Gender	

Male	1 (8%)
Female	12 (92%)
School Board	Huron Perth 7 (53%) Avon Maitland 3 (26%) Waterloo Regional 1 (7%) Toronto Catholic 1 (7%) Thames Valley Public Board 1 (7%)
Public	6 (46%)
Catholic	7 (54%)
Grades Taught	
Junior (4-6)	5 (38%)
Intermediate (7,8)	8 (62%)
Years Teaching	
5-15	1 (7%)
16-20	6 (46%)
21-25	4 (30%)
26-30	1 (7%)
31-35	1 (7%)
Undergraduate Degree	Social Science 4 (30%) Mathematics 2 (15%) English 1 (9%) Child and Youth Studies 2 (15%) Nutrition 2 (15%) Kinesiology 2 (15%)

4.2 Results from Data Collection

The following section presents results from the coding and thematic analysis of the interview data. Questions were centred around the two study objectives: To explore teachers' personal experiences of teaching nutrition education to elementary-aged children (grades 4-8), and to explore teachers' perceived understanding of how practices and activities within schools impact students' nutrition education and well-being. Participants' responses were consistently rich in elucidating two key themes: (1) Teachers' Perceptions of Their Role in Nutrition Education; and (2) Navigating Challenges and Facilitators of Teaching Nutrition Education. These, along with a total of 14 sub-themes, are presented below.

4.3 Teachers' perceptions of their role in nutrition education

In Ontario elementary schools, teachers emerge as the protagonists in imparting crucial nutrition knowledge to young children. Teachers, whether in general classroom roles or specialized positions like Value-Added Planning (VAP) teachers responsible for teaching nutrition education, shared several perceptions and factors that have been identified as sub-themes to the first "Teachers' perceptions of their role" theme. Each of these sub-themes adds nuance and detail to understanding how teachers perceive their role in nutrition education.

Values, Beliefs, and Feelings Teaching Nutrition Education

It was evident from interviews that participants felt engaged in discussions about food and nutrition education, incorporating their personal values, beliefs, and feelings. For a majority, this involvement often included a belief, linked by participants to their upbringing, in the significance of nutrition education and a conviction that there is value in imparting students with knowledge and understanding of food that extends beyond the classroom.

The interviews invited teachers to connect their views on nutrition to their upbringing. While this certainly invited reflections that may not have arisen without this guide, responses did indicate that teachers' understanding of nutrition is rooted in their unique upbringing. The interviews underscored the significance of personal experiences, highlighting how varied backgrounds and

formative years contribute to shaping teachers' unique perspectives on nutrition. One participant noted how their cultural background shaped how they saw Sundays and food around the table:

“Oh, like well, my family's Italian, just like yours. So on Sundays, at lunch, we sit at the table for hours and hours and eat till we can't move basically.” (Participant, 004)

This participant mentioned how when choosing specific resources, they use their knowledge and academic background in the subject to do so:

“And I feel pretty confident when I'm going through the resources I'm choosing based on what I've learned like in my undergrad and at university, and just my own personal interest we do have an OPHEA document, that's Ontario physical health and education” (Participant, 004)

As well, another participant mentioned how they used their personal experiences when teaching and talking about food and nutrition:

“I always use personal experiences too, like I do. Umm and I and I use it and I use my daughter's personal experiences too, like about mushrooms.” (Participant, 010)

The personal connection that teachers were able to articulate in teaching nutrition demonstrated the emotional investment that educators can bring to this aspect of their pedagogy. Several teachers' statements revealed an emotional connection that appeared to be a crucial motivator for their genuine commitment to their student's well-being and future choices.

“And I really, personally, I felt drawn to talking to kids about food because of how important it is for them to, you know, eventually they're going to create their own family traditions, especially the older kids, where they have choices, the younger ones.” (Participant 006)

As comes across in the above quote, several participants expressed feelings of responsibility and duty when it comes to shaping students' understandings and perspectives on food and nutrition. Thus, for example, as the following participants noted:

“So it's an enormous responsibility as someone standing in front of a group of young people, and you have to take it seriously and really make sure that what you're saying, is what you meant.” (Participant 002)

“As an educator, I feel like it's all of our responsibility to help kids learn about it because it's lifelong and it's so impactful on later life. And so I look at some of those lunches and I always try and teach kids about the impact that it has on their bodies and on their learning.” (Participant 012)

One teacher's declaration of living and breathing what they teach illuminates the profound connection between the educator's personal feelings and values in the realm of nutrition education. The teacher explains this by saying:

I live and breathe what I teach, so I'm very passionate about it and they can see it, like I'm in and I'm eating and they're like, Oh my gosh, what's in your shake and you know, so I practice what I preach. (Participant 005)

Not all teachers shared enthusiasm or feelings of confidence about their role. One teacher, for example, expressed their lack of enthusiasm and feelings of obligation, rather than passion, for teaching nutrition:

“Umm, I'm going to give it brutally honest. It's something we just have to do. I don't find it particularly exciting, to be honest.” (Participant 010)

Another teacher admitted that they had a lack of enthusiasm for teaching nutrition education due to the challenges and barriers that surround teaching it:

“Yeah, I don't think it's like one of the ones that we look forward to because of some of the challenges that I mentioned.” (Participant 013)

Similarly, this participant expressed feeling overwhelmed by the task despite years of teaching experience, stating:

“I think the school could play a bigger role than what it currently is doing, and even as an experienced teacher like I said, I admit to being somewhat overwhelmed by the by the like task of teaching nutrition properly.” (Participant 013)

This participant's admission of feeling overwhelmed emphasizes the emotional challenges that accompany the responsibility and as well the complexity of this role – complexity that will become more evident in later themes.

A lack of confidence in their knowledge of the subject matters was expressed by one teacher:

“Yes, I'm confident in the fact, but I'm not a nutritionist and I didn't go to school for that. So no, I don't feel confident in that respect.” (Participant 010)

The statements reflect a sense of unease and stress regarding teaching nutrition. The participant acknowledges their background does not align with being a nutritionist, leading to a lack of confidence in teaching nutrition education.

Another participant's response included sharing their sense of being an impostor at times, though this sense did not come from judging their knowledge of the subject matter to be insufficient. Instead, for this participant, what they acknowledged was an internal conflict arising from enjoying "sometimes foods" on their own time, while teaching being tasked with teaching students the importance of moderation. The participant explains this by saying:

“Emotionally said I feel a little bit like an impostor sometimes because I enjoy those sometimes foods and I'm trying to teach them that that's OK. Sometimes I like chocolate too, but it's not something I would have a lot of.” (Participant 005)

Each teacher expressed a unique yet similar experience of their own set of values, beliefs, and thoughts when teaching nutrition education. Overall, participants' descriptions of their role as educators and deliverers of nutrition education conveyed an intertwining of feelings, values, and beliefs that always included recognition of the importance of teaching nutrition, but differing degrees of passion for the subject and differing degrees of confidence in their suitability or preparedness for the role.

Teachers As Role Models

One of the strongest themes that arose while listening to teachers was the theme of being a role model or acting as a model for their students. As a teacher, assuming multiple roles is inherent to the job, and one of the most impactful roles is that of being a constant presence and role model for children. This idea of a role model was showcased through participants' explanations:

“So I think that like it, shows a healthy balance, right that that kids could look at me and see that I practice what I preach, that I'm making sure I'm finding time for myself to eat properly and that I'm also not restricting myself from maybe that chocolate bar that somebody saying no, you can't eat that, that they see well, no, it's fine that I'm having.” (Participant 002)

“To a child like... and as I said to you, I get kids who will say to me all the time because they know I teach healthy living and they'll say, is this like they'll hold up a whatever roll up or those candy things that they say they're real fruit. And because we've examined them

like when we've said, OK, let's take a look at what's really in those things like cause you know what, real fruits [gummy snack] have sugar in them.” (Participant 006)

“But I do think like not to say anything about me..... but I feel like the kids view me as like a healthy person....I participate in a lot. I coach a lot of the sports teams and I feel like they view me as a younger teacher and a healthier teacher.” (Participant 008)

Relating to the participant’s quote in the last section of living and breathing what they are teaching, several participants reflected on being visible examples for their students. They mentioned showcasing their eating habits and being present during snack and lunch times in the classroom.

“But I think if they saw me eating junk all the time, I think they would think it's OK, you know? Even you're just leading by example. You know, if every day at recess I'm having a chocolate bar or I'm having twinkies or something, I think they would think it's OK. But if they see me eating veggies and dip at first snack or they see me eating like you know. Whatever, like some kind of fruit or something at the last snack or some Greek yogurt or something with fruit. I think they would note it right..... you know. (Participant 007)

“And I eat lunch with my class because they need to, you know... here's what I'm eating, and here's what's happening.” (Participant 009)

Teachers' descriptions of where, when, and how nutrition curriculum is conveyed to their students reflect their understanding of playing an influential role beyond words, emphasizing that their actions and behaviours around children also impact their understanding of food and nutrition.

What Teachers Perceive as Nutrition and Nutrition Education

Teachers' perspectives on nutrition education reveal a diverse range of viewpoints, highlighting the multifaceted nature of this field. Some educators take a holistic approach, seeing food as essential fuel for overall well-being. Others emphasize nutrition's foundational role in health and development. Some delve into the technical aspects, defining it as the 'science of eating,' while others adopt a broader view, encompassing personal food choices. This spectrum of perspectives illustrates the varied ways teachers conceptualize and teach nutrition in educational settings.

This rich spectrum of perspectives shows how differently each teacher may think about nutrition and understand or impart knowledge about nutrition in the educational setting.

A prominent theme in teachers' perspectives on nutrition is a holistic approach centred on the belief that food is the fundamental fuel for the body. Educators consistently emphasized the pivotal role of nutrition in energizing both the physical and cognitive aspects of their students, essential for learning. They were intentional in discussing nutrition with students, focusing on the scientific and practical implications of food choices. For example, teachers said:

“For sure so I think, it would be basically, how they eat, and how, we all eat and how it fuels our body and gives us energy so that we can learn and play and be healthy basically and the impacts of our choices on our health like short term and long term.” (Participant 001)

“To me, it's saying that having natural foods, so it would be maybe a natural diet versus a processed diet, perhaps because umm, you know, and that's where like and I wouldn't use that with the kids because I don't like to say healthy because then that means everything else is unhealthy, whereas we refer to it as sometimes food.” (Participant 006)

“I guess I would just keep it fairly general and say I think nutrition is eating food that will give you the energy that you need every day and also give you longevity and stay in in terms of staying healthy over the course of your lifetime.” (Participant 013)

“I just really, really want the students to know how important it is to view food as fuel.” (Participant 008)

These educators, despite some linguistic variation, share a common approach to teaching nutrition centred on the concept of "food as fuel." By highlighting how dietary choices impact energy levels, overall health, and long-term well-being, they position themselves as advocates for fundamental nutrition understanding. Whether describing nutrition as "the science of eating" or emphasizing natural foods over processed ones without strict labelling, teachers aim to keep students focused on the practical implications of food choices for daily activities, learning, and sustained health. This neutral approach provides students with a versatile foundation for navigating nutritional complexities and fostering a holistic perspective beyond individual preferences and dietary trends.

Where participants demonstrated quite consistent commitments to focus students on the scientific or practical aspects of food choices, more differences surfaced from the interviews concerning educators' values and beliefs regarding calories and sugar. Educators' views on nutrition varied widely, particularly regarding calorie counting and sugar intake, as illustrated by two participant recollections:

“And I know some grades do, I tend to not focus on calorie counting. I think it's a dangerous thing at this age, especially for young girls, so I tend to focus on sugar and if we're putting this much, what is our whole system doing to try and keep up?”
(Participant 009)

“Umm, I don't shame the kids for liking what they like or wanting what they want, but I do make it aware for them so that they know how much sugar is in something umm, or how it's made. There, they're more interested in how something is made. So uh, that shock value sometimes turns them off of gross things that they maybe shouldn't be eating so much of.” (Participant 010)

One viewpoint underscores the potential risks of calorie counting, particularly among younger individuals, emphasizing the focus on sugar and its impact on the body's systems (as expressed in the first quote). The second perspective presented above refrains from shaming students for their preferences, opting instead to raise awareness about sugar content and food production methods, ultimately aiming to influence their choices through informed decision-making (as conveyed in the second quote).

4.4 Navigating Challenges and Facilitators

Teachers reported a handful of challenges linked to teaching nutrition to elementary school children in Ontario, which also revealed insights into the perceived impact on children in their classes. These included: food insecurity, socioeconomic status, culture, body image and eating disorders, scarce curriculum resources, time constraints, teachers' feelings of being a generalist, the home environment's influence, and their self-assessed confidence and competence in teaching nutrition.

As teachers described preparing and delivering nutrition lessons against this backdrop of challenges, what also emerged were several factors that helped teachers navigate resource shortages and other challenges. Delving into these obstacles and facilitators enables a deeper

understanding of what it is to teach nutrition within the publicly funded school system of Ontario today.

Challenges

Food Insecurity & Socioeconomic Status

All participants agreed on the challenge of teaching sensitive nutrition education tailored to diverse socio-economic backgrounds, especially in contexts marked by poverty, hunger, and inequalities. Teachers' accounts cast a spotlight on the far-reaching consequences of varying socioeconomic statuses, not only in terms of students' access to sufficient nutrition but also in terms of the broader day-to-day work and experience of teaching in Ontario's publicly funded elementary schools today.

All teachers shared feeling hyper-aware of the fact that not all students in their classroom had the same access to food resources at home. These ideas were abundantly heard and expressed:

“Yeah. I just think it's.....I hate.....I don't know who eats what or who has what at home and who am I to think that just because they're a wealthy family they have a lot of food like, you know what I mean?” (Participant 008)

“Well, and its students looking in their lunch pail and there isn't anything there and it's not actually their fault because they didn't pack their lunch or buy the groceries.” (Participant 004)

Several participants conveyed a clear sense of heartbreak they faced in observing or thinking about their less advantaged students. The following comments all emerged in response to the question surrounding observations they have made on the snacks and lunches in their classroom:

“The amount of kids that don't eat breakfast shocks me. The amount of kids whose lunch is a handful of crackers.” (Participant 009)

These quotes capture the heavy feelings teachers expressed concerning teaching nutrition while being deeply aware that for some students, having fresh fruit, and having options for their meals, let alone a packed lunch, was out of reach. It is important to note that these challenging feelings did not appear to stem from teaching nutrition itself, but from teaching it within a context where many children and families struggle to afford sufficient and healthy food.

“Umm well, I think I think I have two minds about that. I think because you must be a bit wary of, like the socioeconomic circumstances that your kids are coming from, so. Probably I would, probably try and walk the line on that. So I mean, I think my understanding of the cost of food or that someone's like prepackaged less healthy options can be less expensive and maybe the only option that kids might have access to.”

(Participant 013)

Participants reflected on scenarios that illustrated the harsh reality of food insecurity, such as sending groceries home with students and ensuring access to food at school and in the community without judgment.

When discussing food insecurity, it is important to highlight observations made by participants regarding some students' use of food banks during food drives. Specifically, teachers expressed:

“Uh, when we have run out of funding for breakfast program and snacks, there are a lot of kids that rely on that and it’s sad to see that happening.” (Participant 010)

“But there is a lot of ‘I wish we had that at home.’ Or, umm, those types of things. We also see, I’d say more in school now families that it’s tricky to provide at home, so they’re living on food bank food or we providing for them some food. Or they’re going to the food bank.” (Participant, 004)

“For like right around this time for the food bank and the kids bring in like non-perishable items like and our school’s pretty big, there’s 800 kids so. So they end up with this like massive amount of food that goes to the food bank at this time of year. And I know that.. that is a meaningful thing for the kids, I think to give back to the wider community what they don’t always realize is that some of those, some of those families are in our community, right?” (Participant 013)

Teachers brought up that they understand the socioeconomic division, and can understand how this may create judgment or stigmatization for students:

“And there’s quite a bit of disparity there and I think because sometimes it can be connected to class and everything too so it can I think it can make kids feel a bit divided that you know they aren’t healthy or this is what my family eats and I and they feel bad about that.” (Participant 001)

“And so we’re also really, really careful when we’re asking families to donate food, like, say, during Thanksgiving or food drives that some of our families are actually accessing the food drive.” (Participant 003)

Within the realm of socioeconomic status and nutrition education, educators expressed a shared concern for sidestepping judgment and stigmatization. The recognition of disparities connected to class, as highlighted by one educator, raises the awareness that such distinctions can lead to feelings of division among students, potentially impacting their sense of well-being.

This educator underscores the human aspect of teaching, emphasizing the lasting effects of unkindness, particularly when it comes to socioeconomic differences, on a child's life trajectory. These insights underline the challenges teachers grapple with in fostering a supportive learning environment, weighed against the potential consequences of societal inequalities on their students.

“I mean, you're dealing with humans who have feelings and when kids are not kind about that. That's really hard and again, like, I mean, you can change the trajectory of someone's life.” (Participant 003)

Teachers shared this experience that amidst the challenges posed by varying socioeconomic statuses, a powerful narrative emerges, that is the unwavering support and dedication of teachers and schools to mitigate the impact on students. Most participants illuminated a heartening reality where educational institutions go beyond their traditional roles, actively providing crucial support to bridge nutritional gaps.

“And to ensure that, kids who especially are faced with food insecurity have access to food at school within the community, right, without judgment.” (Participant 003)

Teachers' reflections underscored a commitment to ensuring that no child faces judgment or stigma based on the contents of their lunch. The provision of hot lunches, brown snack bags, and extensive snack programs within schools signals a collective effort to address the nutritional needs of students, irrespective of their economic circumstances.

Overall, these collective insights underscore the multifaceted challenges educators encounter in addressing socioeconomic disparities to provide comprehensive and inclusive nutrition education for all students.

Culture

Throughout the interviews, a key theme that emerged among participants was that of cultural diversity. Cultural differences among students could pose unique challenges for discussions of food and nutrition, generating a landscape where not every student shares the same cultural heritage, dietary norms, or culinary practices. As one teacher expressed:

“And I think you'd also have to be really sensitive to cultural differences too, because a lot of the kids I teach come from other parts of the world where I'm like, I have no idea what's in your lunch.” (Participant 013)

The above participant's statement showcases a realization that students' meals within their class may not always align with their own meals and cultural norms and experiences; as such, the teacher showcased how they respect the diverse dietary practices within their classroom.

Other participants drew attention to the experiences of sensitivity surrounding food consumption, particularly when it involved dishes from different cultural backgrounds that might appear or smell unfamiliar to some students:

"Also, because we have a lot of students with ethnic backgrounds that we have to talk about, and students with health issues.... we also have to be mindful of students that don't have access to certain foods and talking about that. So, we don't discourage kids from.. we don't necessarily discourage the food, but we say eat something healthy 1st and then choose the other thing that you really want." (Participant 010).

"that would probably be the only time where it's been sensitive around food eating is when it's from a different culture and looks and smells different." (Participant 009).

Both quotes demonstrate the educators' conscious efforts to navigate cultural diversity and dietary practices within their teaching environments.

One participant provided valuable insights into the challenges teachers face when teaching nutrition, particularly in the context of cultural diversity and the limited representation of diverse foods in the curriculum this teacher shared this by saying:

"...in my own experience, I have not been exposed to a wide variety of different cultures, and cultural foods. And you know, a classroom, for example, especially in Location you know, over the last few years, we're becoming more and more diverse.....if I work up and different locations well, so I see it there too. That kids are becoming more aware of a variety of foods that are available. Right. And stuff that they probably have never seen before. Or experienced before. And I don't think the curriculum in my experience really lent itself to that." (Participant 003)

The participant acknowledges their limited exposure to a wide variety of cultural foods, highlighting a personal gap in cultural knowledge that might affect their ability to effectively engage with the diverse dietary backgrounds of their students. Moreover, the participant illustrates a common theme from the interviews on the increasing diversity within their classroom and community, noting that students are encountering foods they have never seen or experienced before.

Body Image, Eating Disorders, and Disordered Eating

Several participants noted a major sensitivity around body image, particularly among younger children. In this delicate realm, educators found themselves at the intersection of fostering healthy eating habits and nurturing positive self-perception. The potential challenges involved in talking about food within a context where such talk may provoke stress in students dealing with body image issues were expressed as follows by one participant:

“Especially when it comes to things like body image and that esteem piece. Because oftentimes it comes with the food, especially, you know with kids. That's probably the toughest area. Because you kind of think am I saying anything that's going to hurt this child?” (Participant 003)

Very commonly addressed in interviews was this fear of what one might say to hurt a child. The above quote helps to articulate the challenges that teachers may face when addressing these body image concerns in the context of both nutrition lessons, and within the classroom.

Sharing their experiences, educators again and again recognized the profound impact they understood their words and discussions could have on students' perceptions of themselves and their relationship with food. Many expressed feelings of responsibility to be aware and thoughtfully navigate the challenge of observing and intervening when observing behaviours that were nutritionally sub-optimal, and often gendered, such as restricted eating:

“So again, then you have to step in and have conversations about body image and health and overall health and mental health and all of that sort of stuff.” (Participant 011)

“So umm, if I have a large group of people who I know even if there's a couple experiencing eating disorders or a family member who suffering it, it's a very sensitive topic. So ensuring that when I'm approaching it, I'm being very sensitive to that information that I hold about kids and their families.” (Participant 002)

One of the most frequently recurring and deeply sensitive discussions raised by nearly every participant revolved around the issue of body image. With references ranging from the youngest to the oldest classes within the school, teachers vividly recalled poignant events and conversations that shed light on the heartbreaking struggles surrounding body image experienced by young children. Of all participants noting this struggle, the following quotes showcase the participant's observations of challenges faced by students, particularly regarding societal perceptions of body size and the associated pressures. Echoed across participants, such quotes highlight the pervasive backdrop body image issues are playing for some teachers, as they consider how to approach talking about nutrition:

“Yes, especially that! there, are some kids that, and I've seen it all with kids that are larger. They will sometimes, especially as kids get older and starts making that connection with what they're, eating and how food can influence weight and health. There are comments to kids who are a larger size. We talk a lot about not judging people's bodies just in general and talking about them and how people looked just from a whole standpoint of just inclusion when it comes to, you know, or even clothing choices and all those types of things.” (Participant 001)

The participants recounted instances where young girls have resorted to extreme measures such as hiding their lunches in the bathroom, displaying signs of eating disorders like self-starvation, and even using classroom tape measures to measure their waists. Participants expressed a sense of sadness and alarm at witnessing such concerning behaviours among students:

“And also sometimes the girls are starting to make choices to not eat or are concerned about gaining weight and sometimes looking at nutrition or health from the perspective of being skinny not necessarily healthy so maybe food restrictions versus healthy eating and exercise can sometimes be looked at as well that they're healthier and there can be some judgment there too and I see that coming in more and kind of in that grade 5 and up range.” (Participant 001)

“Every year we do, we had in past years we've had a girl hiding her lunches in the bathroom. We have had girls with eating disorders in more sense of starving themselves. I have tape measures for math in the classroom, obviously, but measuring their waist and making sure that it's going around so it does.” (Participant 009)

In several participants' experiences, certain behaviours indicating body image concerns started to emerge around the ages of 9 or 10, as children began to experience changes related to puberty.

“I only teach 10- and 11-year old's and they're already very aware of their hip size, their waist size and yeah, yeah, it is horrible.” (Participant 009)

“Cause.....even though they're not necessarily talking about disorder eating, I can see a lot of those feelings starting around like 9 or 10 as they start to hit puberty there's people especially the girls being very aware of their body size.” (Participant 001)

Participants mentioned that there is a noticeable awareness regarding their body size and shape, especially among girls at this stage of their development. In addition to the behaviours described in quotes above, several noted other potential signs of body image issues they had observed:

“Yep, uh students have in the past, have been worried about their bodies and their changing bodies so they don't eat. Or just having people judge them and so they don't eat during the day.” (Participant 005)

Throwing out food suggests an underlying discomfort or reluctance to disclose what they are eating, with distinctions apparent between those who openly share their lunch and those who prefer to keep it private. Some participants noted with worry in their voices a trend where body

image concerns and disordered eating habits are emerging among children at much younger ages than previously observed:

“I mean, and younger than I had experienced in my life. Right? That they were impacted by that [body image and disordered eating] at far earlier.” (Participant 003)

“I do find that it’s really kind of like some of the topics that you do address that can kind of get into some of that disordered aspects are addressed in in later years are not directly addressed at the age that we’re seeing some of that.” (Participant 001)

A unique insight from a participant highlighted the profound impact of media, especially online platforms with filters and unrealistic standards, on young individuals’ perceptions of body image, the participant explains this by saying:

“I mean body image is a massive issue and you know some of the filters and all that kind of stuff online are really, really not a realistic and they, I mean we talk about media to death and like helping healthy body image and all that and it just they just don’t seem to receive it they they’re just I don’t know why but they do tend to be extremely hard on themselves so.” (Participant 013)

As this teacher describes, social media platforms often present idealized and unattainable body images, leading to heightened self-scrutiny and unrealistic expectations among young children. The teacher mentions how despite extensive discussions about promoting healthy body image and addressing media influence occurring at school, the children within their school seem to struggle to understand the major impact it may be having on their own ideas of body image and eating.

Teachers discussed the significant impact of food and nutrition on mental health, leading to extensive conversations during interviews. Disordered eating behaviours emerged as a prominent theme across all conversations, with teachers sharing stories highlighting the link between food and mental well-being. They expressed concerns about the prevalence of these behaviours among students, reflecting on observations and overheard conversations. This consistent discussion underscored the critical concern of disordered eating behaviours affecting children's overall health in educational settings. Participant quotes further illustrate this ongoing conversation:

“Yeah, I would say I see that a lot [restrictive eating], quite honestly, where they don't eat snacks at lunch.” (Participant 008)

“We have had girls with eating disorders in more sense of starving themselves.” (Participant 009)

“But definitely when I was teaching grade eight, yes, there was, there was definitely restricted eating happening. There were a lot of other things happening too. I had a few Grade 8 classes that were quite angst filled. Umm but yeah, like it, it's there were anxious

children, there were girls in particular who were restricting their eating because of their own body image. So again, then you have to step in and have conversations about body image and health and overall health and mental health and all of that sort of stuff.” (Participant 011)

“Well, like I’ve had students who have shared that they suffer from anorexia. So once student I know was hospitalized for about six months to try and the recent years tried to fight their battle and they still now they’re a little bit older and they still struggle every day.” (Participant 002)

Participants mentioned that it concerned them how prevalent restrictive eating habits and disordered eating behaviours are becoming among students. Interestingly, in various grade levels, teachers observed instances where children opted out of eating their packed lunches, indicating a worrying trend toward restrictive eating. The concern deepened in higher grades like eighth grade, where teachers encountered girls specifically restricting their eating due to body image concerns. Additionally, some students bravely shared their struggles with disorders like anorexia, with one student undergoing a lengthy hospitalization in their battle against the condition, highlighting the ongoing challenges and the enduring impact of such issues on young individuals.

“They are embarrassed to eat in front of others, like they’re not comfortable eating that chewing motion or whatever. Or just having people judge them and so they don’t eat during the day.” (Participant 005)

“I just like Yeah, anorexia is usually more common than bulimia, but I have seen bulimia a couple of times with kids, but those, you know, asking for support typically like, you know, we have a couple resources for things like that.” (Participant 013)

“There’s probably like I can probably count on one hand the number of our intermediate students who I right now have are going through something that way, and that would always be the case. Like for the last 19 years there.” (Participant 013)

Restrictive eating habits and eating disorders were talked about in almost every interview and each teacher shared heartbreaking stories ranging from grade 1-8. Teachers expressed this concern that these habits and behaviours severely impact children in the school and were worried that their words could have an impact on this as mentioned in the barriers to teaching nutrition education theme.

Participants expressed how the sensitivity around body image is not just confined to specific lessons or isolated to the instruction times for nutrition but is in the broader landscape of teaching nutrition. Reflections from teachers expose how body image weaves itself into the fabric of everyday conversations in the class, halls, and yards.

Along these lines, a teacher shared a unique experience that underscores the deliberate avoidance of practices like lining up students by height or size:

“I'm very conscientious. I've never. We don't line up from... I remember the days of [lining up from shortest to tallest] shortest to tallest or breaking up by size.” (Participant 009)

The above quote is not about nutrition but emerged in explaining how even during preparation for a class picture, or during a simple gym class, children’s body shapes and sizes are emphasized as kids are lined up or divided by size for teams. The reference above is where there is a sensitivity beyond the nutrition teachings within the classroom, there are sensitivities in body image, size, and even shirts to use during gym class.

Scarce & Vague Curriculum Resources

Teachers in Ontario are provided with a curriculum for all subjects that they are mandated to teach. Nutrition is one of those subjects. However, as reported by teachers, the limited availability of materials hinders the delivery of comprehensive lessons, impedes the development of a thorough understanding, and diminishes at least some educators’ confidence that they are effectively teaching this mandated subject. Participants unanimously highlighted the scarcity of resources and curriculum as a significant challenge:

“I always find the curriculum in general doesn't. Like it's kind of an outline of what we're supposed to do and then we're kind of left to find our own resources.” (Participant 001)

“It's hard to it's hard to get good information, and if you're just working off that curriculum, yeah, it doesn't really give, in my opinion, it doesn't really give educators what they need to again to really be effective at giving students that that nutritional information that they need.” (Participant 011)

“Yes, because it's [curriculum is] lacking, like it's not really, UM, it's not really functional. Like I don't think after the kids would really know how to make healthy food choices or pick the best option.” (Participant 010)

The sentiments echoed by participants regarding the limitations of the curriculum in facilitating effective nutrition education resonated with the statement made by Participant 001.

The participant's reflection on the curriculum's insufficiency, likening it to a mere outline, aligns with the collective perspective. Teachers described struggling: grappling with a lack of detailed guidance, or substantive materials with the mandated nutrition curriculum.

The participants shared an overwhelming consensus of feeling left to source additional resources independently:

“I mean the curriculum touches on all of that, but again, there's absolutely no script to follow. There's no resources you have to find lessons on your own or plan lessons on your own. There's really not a lot of resources for mental health, for kids, for teachers to help teach it.” (Participant 011)

“But I think the one thing as a teacher that drives me crazy is the lack of resources and having to go and find those resources from a variety of places. I know you know, there's all kinds of places you can go to.” (participant 011)

Highlighted in these excerpts is the frustration among educators regarding the lack of resources, clarity, and guidance within the nutrition education unit, but also stems from the fact that with these gaps, comes more work for the teachers.

This is further explored through the various resources teachers turn to for information, and materials to teach nutrition education. Quotes from interviews underscored the spectrum of resources employed by teachers, spanning vetted platforms such as Ontario Physical Health Education Association (OPHEA) to broader sources like Google. While OPHEA provides standardized information, other platforms do not. The subjective nature of resource utilization becomes evident as participants express the flexibility from one teacher to the next:

“Umm, we use a variety of things that we draw from, so we use the curriculum, we use OPHEA just the interweb, I call it, we use the Google.” (Participant 005)

“Yeah, it's kind of just gathering bits of pieces everywhere, like it's not like we were given this unit and said, here's your resources. Here's what you do it especially for something like nutrition.” (Participant 007)

This flexibility extends to the interpretation of the Ontario curriculum for nutrition, described as “vague” and “open-ended” by some, causing some discrepancies in how teachers teach and speak about food.

Some of the participants emphasized the importance of steering children away from categorizing foods as inherently good or bad. Instead, the focus is more on understanding food as a source of energy and nourishment, or “food as fuel”.

“I just really, really want the students to know how important it is to view food as fuel.” (Participant 008)

“I don't usually give them do's or don'ts because I don't necessarily agree with. There are no foods that are bad foods, right?” (Participant 011)

Conversely, within the spectrum of approaches to nutrition education, some educators embraced different viewpoints, emphasizing food categorization, and imparting specific directives on 'good' and 'bad' foods. It is important to explore these varied perspectives to understand the spectrum of approaches taken by educators in shaping children's perceptions of food and nutrition.

“Stay away from like you know, I love that juice is taken out of like Canada's Food Guide. That was one thing I really had a hard time teaching I would definitely give my opinion on that one.” (Participant 005)

“I don't allow juice boxes in my room. I don't think they're needed, so it's interesting, what schools allow.” (Participant 009)

“umm, so you are what you eat essentially.” (Participant 005)

The diversity of viewpoints among teachers regarding food choices and nutrition within school environments is noteworthy. Participants reported instances where conversations in staff rooms or classrooms reflected casual judgments on students' food selections, often linked to perceptions of parenting styles. Moreover, teachers' responses to students' inquiries sometimes unintentionally conveyed personal biases or experiences, influencing the messaging around food. For instance, some educators exhibited strong opinions on specific food items or categories like "juice boxes" or "lunchables," emphasizing personal preferences or advocating choices within their teaching spaces.

Overall, the lack of guidance, and standardized approach to teaching nutrition, was reported as a major obstacle to teaching nutrition education, generating inconsistency across lessons, resources and conversations children are receiving about food and nutrition per teacher.

Time Constraints

Time constraints were one of the most common challenges mentioned by teachers concerning teaching nutrition:

“I'm just going to say because it's a very small part of our curriculum. It's embedded in, health, right? You've got your gym and your health and it's it really doesn't take up a big portion of your curriculum. It really should take up more.” (Participant 003)

“So it's not like it's only health that they talk about every once a week for 40 minutes.” (Participant interview 008)

Participants reported that health was taught for 40 minutes to an hour once a week. Important to note is the fact that the health curriculum does not just cover nutrition: it is a comprehensive overview of many health topics such as substance abuse, mental health, physical education, social-emotional learning, human development and sexual health, and personal safety injury prevention. The final section of the health curriculum as of [2019] is “healthy eating,” within which nutrition is addressed. Teachers provided more granular detail on when and how they could and did integrate their nutrition education in the classroom in statements such as the following:

“So you probably get it a couple times a year. Realistically health, we do our best to fit it in, but typically we do it in big chunks.” (Participant 013)

“Half an hour is not that long, and so it takes a while. It takes a good couple of months to sort of get into a unit.” (Participant 011)

“And to be honest, you probably could squish in like a solid six weeks and you'd be done for the year of what there is there.” (Participant 010)

“Nutrition is not I have to be honest.... I would say this in the world of teaching right now, it is not, and I don't know that this will answer it clearly for you. It is not a problem to teach it. It's a problem to have time to teach it, and in the midst of the chaos of education right now, we are so overwhelmed with curriculum and expectations and time management and everything.” (Participant 009)

The last participant emphasizes that the issue doesn't lie in the difficulty of teaching nutrition itself, but rather in the scarcity of time allocated for it amidst the complexities of the educational environment.

The following quote reflects the anxiety felt by educators when essential life skills, like nutrition, are condensed into brief, infrequent lessons:

“Makes me really nervous when things that have to be ingrained for a life skill become something I touch on for 1/2 hour once a month and it's that fine balance.” (Participant 009)

It highlights the delicate balance between covering vital topics adequately and time constraints. These instances exemplify teachers' stress and genuine concern regarding the limitations of time available for teaching crucial subjects.

Several teachers expressed concern that amidst the struggle to cover these essential subjects, some teachers may overlook or deprioritize health education, including nutrition:

“And then there's also, like, I mean, you got all kinds of teachers, some teachers are struggling just to cover, you know, the kind of core curriculum stuff that they have to cover, like writing and reading and math and, you know, and then there's some teachers that might not even be doing it.” (Participant 007)

“fear is that it is a skipped subject in classrooms, much like art and drama and dance and all the other important things that are being cut. And I'm just worried that not every classroom is probably teaching nutrition.” (participant 009)

This fear is substantiated by the possibility that in certain classrooms, due to time constraints or instructional priorities, health education might not be adequately addressed or potentially excluded from the curriculum. This exclusion could result in sporadic or inconsistent delivery of crucial nutritional information.

Teachers as Generalists

Through the interviews, teachers expressed the challenge of teaching nutrition stemming from their need to play many roles. The participants used the word ‘generalists’ multiple times:

“Anything that can be provided that will give some guidance because we are not experts on. We're generalists. Right, but we're expected to be experts on everything. So to have this knowledge of a variety of different subject areas.” (Participant 002)

“I mean, when you're an elementary teacher, you're a generalist. You end up, you know, sometimes doing religion, drama stuff. You might not feel comfortable with, but you just have to do it.” (Participant 007)

“It's not just in nutrition, it's the difference between are we teachers and like purveyors of information, or are we content creators? And right now, it seems like it is the era of content creators, and it takes up so much time.” (Participant 011)

The last quote captures well the feelings expressed by many of the participants as they described the multifaceted responsibilities teachers undertake. Their roles are never solely as nutrition educators: their role in practice is one of the versatile professionals expected to facilitate diverse students' learning on a myriad of subjects within the elementary school curriculum, as well as create content for those subjects. Some teachers suggested their being tasked with developing expertise in everything may be a challenge that they could not and should not be expected to overcome:

"We don't know everything and because this is a subject matter that we're teaching, it would be ideal if a nutritionist came in and did that component and actually went to school for that." (Participant 006)

This quote acknowledges that teachers may not possess exhaustive knowledge on the subject of nutrition, leading to a preference for external expertise, specifically from a nutritionist. Several teachers expressed a desire for specialized professionals to contribute to the nutrition education component, reflecting a perceived inadequacy in their expertise and a belief that equipping them alone may not be the most suitable solution. The quote underscores the confusion teachers feel in teaching diverse subject matters within their roles, signalling a recognition of their limitations and a preference for collaborative approaches.

The lived experiences shared by teachers illuminate the challenges faced when assuming the role of generalists, tasked with teaching diverse subjects, including nutrition, despite varying levels of comfort or expertise.

The Influence of Students' Home Environment on Nutrition Education

Throughout the interviews, the influence of student's home environments emerged as a recurring challenge to nutrition education. Educators consistently highlighted the profound impact of diverse home settings and cultural traditions on students' dietary habits, access to nutritious foods, and students' attitudes, behaviours, and practices related to food and nutrition. The following statements provide insight into why and how participants experienced these influences as challenges:

“Now there’s a lot of families that have, some very strong food restrictions or choices that they’re making and making sure that I honor all of those and include those in our lessons.” (Participant 001)

“I try really hard not to, mostly because I don’t want to pass judgment on anyone else’s traditions that they’re bringing from home. That’s a big one in that, I think moms and dads are doing the very best they can when it comes to providing food and nutrition for their children. And I’m not the person who’s going to judge what they’re doing.” (Participant 004)

“Where does my responsibility as a teacher end and their responsibility as parents begin? And there’s a very grey line there sometimes, and it’s very hard to decide.” (Participant 011)

“So I’m not really sure that anything. Right, could make it easier for me to be honest because this is someone else’s child, those are the rules that they have. Imposed on their child and you know, I’m at school and I’m a teacher, but I’m not a parent of that child. So. You know, you say the child, well, you know, like. Your parent really wants to eat that.” (Participant 003).

The teachers’ statements reflect this balance that teachers feel when faced with differing parental rules and the challenge of enforcing those to the students. Teachers expressed how they are faced with these situations where a child’s dietary preferences might conflict with parental guidelines, presenting a delicate challenge for them as they are juggling their personal opinions, the curriculum teachings, the child’s wishes, and now the expectations the parent has imposed on them to enforce for the child. They acknowledge the boundaries between their role as educators and the authority of parents in shaping their child’s diet.

Teachers strive to instill good nutritional practices, yet they grapple with the realization that the ultimate responsibility for a child’s dietary decisions rests with the parents:

“I do feel like I cover everything. But at the end of the day, I feel like I have very little control over what the kids do with that information. And the reason I say that is because the mums and dads are doing the grocery shopping at home, not the kids in grade 8 or not the kids in elementary school.” (Participant 004)

“Well, and its students looking in their lunch pail and there isn’t anything there and it’s not actually their fault because they didn’t pack their lunch or buy the groceries.” (Participant 004)

“Right. And I mean, and how many kids really like if you’re talking about probably maybe even grade 3 to 8 or whatever have that much. Influence or control over what’s being cooked or what’s being. Purchased. I mean, they might have a little bit, you know, but. Someone else is usually, not always, but usually making those decisions. So there’s very, very little control there.” (Participant 003)

Such quotes illustrate the challenge of finding a harmonious balance between supporting children’s nutritional education at school while respecting the diverse parental approaches and preferences regarding their child’s diet at home. Another interesting conversation centred around a situation where a teacher’s attempt to educate a student about food choices led to parental concern and discomfort. The participant shared:

“And they were alarmed, but it’s hard because I had one mom call me and said you told my kid this isn’t healthy. Well, this is what we eat for breakfast. And like how dare you?” (Participant 007)

In this case, the teacher’s intention to impart knowledge about healthy eating seemed to clash with a family’s dietary practices, inadvertently causing friction. The teacher who shared this example did so as a means of illustrating why and how discussing and teaching nutrition could be tricky.

Another unique experience was discussed where students discard food or face restrictions in taking leftovers home poses a dual challenge for both children and teachers in the realm of nutrition education. As one participant explains:

“Right, we’ve had kids throwing things away. Because they’re supposed to be eating it and or hey, and that’s another example like where kids do throw out lunch because they can’t bring anything home.” (Participant 003)

Teachers face the task of not only juggling lunch policies but also fostering a positive relationship between students and their meals. Addressing this issue requires educators to find a way to balance adhering to regulations and ensuring students understand the importance of responsible consumption.

Self-assessed confidence and competence

Within this broader theme of obstacles in teaching nutrition, the lack of experience, confidence, and competence emerges as a crucial aspect influencing educators' abilities to teach nutrition education to children. Thus, teachers made comments such as the following:

“Less, less confident than a lot of other things, but like very game, like I'm willing to do it and I do it, but I don't feel it's my strongest like work. And I also feel as though the learning is different for each of the kids which makes it really difficult to know how much is getting through to them, like if ...or if they're influences outside of school are actually more important in that, which is totally fine if as long as they're getting it somewhere.” (Participant 013)

“But I I'm not a nutritionist and I didn't go to school for that. So no, I don't feel confident in that respect.” (Participant 010)

“I admit to being somewhat overwhelmed by the by the task of teaching nutrition properly.” (Participant 013)

This specific subtheme sheds light on the challenges that teachers face when delivering nutrition education due to the limitations in their confidence and competency when addressing this specialized subject.

Some participants, in contrast to the majority, expressed confidence in delivering the health curriculum, particularly within the nutrition units. For these teachers, their confidence acts as a facilitator for providing nutrition education to impressionable children explained by participants:

“I think I felt pretty comfortable teaching and talking about food and to share what I knew about food and using the curriculum and applying the curriculum in the classroom. I think I always felt pretty confident about it.” (Participant 003)

“No, I do enjoy teaching it. I, think it doesn't, induce any stress for me, personally, I know how important it is and also, I think some of the stress that, some educators have expressed to me around it would be, you know, when they talk about like they can only eat certain types of snacks or they really you know they kind of tell kids I can't have something sugary and sometimes the parents will push back and that's why it might induce some stress is, I try not to have too much influence just try and you know teach them that excitement or that interest and willingness to try and make some changes or to think about their health and how they feel and that sort of thing. So no, it doesn't induce any negative feelings at all.” (Participant 002)

“I just use it as a guideline and then I honestly umm, I just. I've always felt like a bit of an expert compared to the curriculum. So, I've always tried to. I've always tried to just enhance what I was teaching the kids.” (Participant 012)

This minority of teachers who highlighted their confidence in teaching nutrition education connected this to their educational background, which often included relevant undergraduate courses or connections to nutrition, or to their personal interest to nutrition.

Overall, many barriers were reported by the participants through their stories and lived experiences. Although teachers mentioned many more challenges than facilitators, teachers also mentioned a few ideas that helped them to teach nutrition education.

Facilitators

Despite the prevalence of challenges, teachers shared some strategies and approaches that aided them in effectively teaching nutrition education. These facilitators are described with supporting quotes below.

Everyday Nutrition Discourse

A facilitator that arose during interviews was the idea of speaking about nutrition to their students every day and not just during mandated lesson time. Conversations focused on limited instructional time for nutrition, but some stressed the importance of everyday talks in promoting nutrition. A very strong voice from these educators echoed how teachings of nutrition were fostered around everyday conversations, and bringing up nutrition education whenever they could:

“Again, it's more during like casual conversations during snack time or when we're talking about gym class or something like that. When I bring it up, not necessarily like health specific lessons.” (Participant 008)

“I think overall the conversations come from outside the lessons because... I will teach that as a unit, and most conversations happen outside of that.” (Participant 001)

“Like I've mentioned, it's been minimal in the health classroom. I would say I try and talk about it [nutrition] as much as possible.” (Participant 008)

The participants emphasized this need for authentic engagement and discussions that transcend the conventional classroom approach of dedicated time to nutrition lessons. Such everyday conversations not only served to increase opportunities for speaking about food and nutrition, but

also enabled more organic conversations, and in this way potentially more useful or memorable to students:

“I make sure it's an everyday conversation of you know, we've got this in the room. What do we have today? This that. Have you ever tried this? Because it needs to be our language every day, not a well hit on this at the end of the month.” (Participant 009)

“I Think it has to be in everyday conversation health, otherwise we're missing the point. I'm not going to stand up in front of the room. Show them the Food Guide and say you have to eat this, this, this and this. Have them color a worksheet and then move on.” (Participant 009)

“But I find it's actually better to just keep bringing it up all the time. What are you doing? You know, say around Christmas time. Like what are your family traditions around food? And then you know the next like a couple of, like, say, a month later, we'll do like a food log where they, like, track their food for a week.” (Participant 004)

These excerpts vividly highlight teachers' commitment to making nutrition an intrinsic part of their everyday teaching and language and fostering discussions about food choices during snack time or lunchtime when the teacher chooses to stay in the classroom, or when snack bins are brought into the class. Teachers make deliberate use of time during the day, in the hallways, and beyond structured instructional periods to infuse nutrition into continuous learning.

Resourceful and Creative

Conversations with these dedicated teachers revealed the extensive resourcefulness and creativity teachers employed, to navigate the lack of resources and other challenges they faced concerning teaching nutrition in Ontario elementary schools. Teachers expressed how they took on the bulk of crafting resources including lessons, approaches, sourcing supplementary materials and exploring online resources as well as taking their own time to educate themselves about the new and changing trends in nutrition. Their proactive approach and tireless efforts underscore a profound sense of responsibility, ensuring they offer nothing less than their best when imparting crucial nutritional knowledge to the children entrusted to their guidance. Participants expressed this:

“And I feel pretty confident when I'm going through the resources I'm choosing based on what I've learned like in my undergrad and at university, and just my own personal interest we do have an OPHEA document, that's Ontario physical health and education.” (Participant 004)

“As a teacher just reading up on it myself and looking for resources, and doing my own. Kind of digging up resources and things for teaching so ya!” (Participant 001)

“I think just in general, knowing my class, what the family choices and restrictions are around diet, and food and culture. Religion and posing all that in a positive light, you know, just kind of being excited around different foods from different cultures that I've tried or enjoy and or how fun it is to try something different or, you know, bringing up some positive that I've noticed in someone's lunch.” (Participant 001)

These quotes illustrate how teachers adapt creatively to meet their students' diverse needs. By understanding each student's life circumstances and challenges, teachers demonstrate the ability to adjust their teaching methods on the spot, ensuring lessons resonate with students' experiences.

Teachers report creating their own resources, by searching various sites such as Teachers Pay Teachers, educating themselves, and integrating their own views regarding nutrition:

“I know some people might use YouTube and different things. The difference is if something happened and you're not using an approved video, then you don't have as much backing.” (Participant 002)

“Umm, we use a variety of things that we draw from, so we use the curriculum, we use OPHEA just the interweb, I call it, we use the Google.” (Participant 005)

“ Yeah, it's kind of just gathering bits of pieces everywhere, like it's not like we were given this unit and said, here's your resources. Here's what you do it especially for something like nutrition.” (Participant 007)

Creativity and resourcefulness are facilitators for teaching nutrition in the context of limited guidance and materials. As noted previously, however, this individualized method introduces risks of inconsistent or less-than-optimal messaging. A nuanced challenge within nutrition lessons is that of inconsistency, as highlighted by participants stressing the responsibility of teaching without a universally prescribed unit or handbook.

Collegial Support

Collegial support emerged as a prevalent and pivotal theme in facilitating teachers' ability to effectively teach nutrition education. Teachers noted that they often rely on the expertise, insights, and experiences of their peers to navigate the complexities of teaching nutrition. Engaging in discussions, sharing best practices, and exchanging innovative teaching strategies among colleagues foster an environment of continuous learning and improvement. A participant noted an important website:

“But if you want to really narrow into a grade, you have to look, and a lot of Teachers Pay Teacher resources are utilized.” (Participant 006)

Highlighting the extensive use of Teachers Pay Teachers (TPT), educators emphasize its role as a vital resource platform for accessing grade-specific materials. Although Teachers pay for other Teachers' resources, the cost is very minimal making it very accessible (ex 2-3\$ CAN per unit). It was noted as one of the top places teachers find adequate resources to use for teaching nutrition lessons. Participants noted heavily such positive messages surrounding their use of Teachers Pay Teachers, and how thankful they were for other teachers providing their time and resources for others. TPT, founded in 2006, stands as an online marketplace where teachers globally exchange educational resources, including lesson plans and worksheets tailored to various grade levels and subjects. The widespread use of TPT, evident in interviews, underscores a collaborative exchange among educators, streamlining access to high-quality, curriculum-aligned content.

Additionally, the collaborative efforts of the Value-Added Planning (VAP) team across Ontario exemplify the theme of collegial support in nutrition education:

“We used to get together, the VAP [value added planning, resource teachers] used to get together and we used to plan together so we would take the components of the curriculum and say OK, so how can we make something meaningful and sometimes we would take like primary together, junior together, intermediate together and then from that like narrowed into the areas that we had to make sure that they, you know we're introduced to them for example cooking show is really huge for that because we do drama as well this term.” (Participant 005)

The participants beautifully illustrated the essence of collegial support among educators. This collaborative exchange allowed them to tap into each other's strengths, ensuring high-quality instruction across diverse topics like substance use and abuse. The willingness to share resources

underscored a supportive network where educators collectively enhanced teaching practices, fostering an environment of continuous improvement and enriched learning experiences for their students.

Chapter 5

5.0 Discussion

The primary purpose of this study was to investigate teachers' perspectives on the impact of nutrition education on children in Ontario public schools, in grades 4-8. This research is important as it initiates an investigation into teachers' experiences in Ontario, a geographical area that has been largely overlooked in studies. By focusing on this specific region, the study sheds light on the unique challenges and needs of Ontario teachers that have not been adequately explored in previous research.

The previous chapter presented findings from a thematic analysis of teacher interviews. As outlined in the previous chapter, findings were categorized into two main themes: 1) Teachers' perception of their role in nutrition education; and 2) obstacles and facilitators to teaching nutrition education. In this chapter, I elaborate on the significance of specific findings with existing relevant literature, and their potential significance within efforts or goals of improving nutrition education for elementary school-aged children in the province of Ontario. All findings discussed in greater detail in this chapter were highlighted by teachers as key areas of concern and complexity. Maintaining this focus on what teachers regard as important is crucial to positioning the findings of this research for impact on existing practices. Teachers are at the heart of this study because they are on the front lines of mediating and shaping school-aged children's relationships to food and their bodies. Here, I draw particular attention to key complexities and challenges of delivering nutrition education in schools that clearly matter to teachers, connect these to existing literature, and offer recommendations for how these might be addressed.

5.1 No Standardized Approach

The landscape of nutrition education in Ontario elementary schools as reported by the teachers in this study, reveals a gap and change required in the lack of standardized approaches to teaching. This discussion theme was derived from the obstacles and facilitators to teaching nutrition theme in the findings. It was reported during interviews that teachers often adopt personalized methods, utilizing platforms like Google, YouTube, OPHEA, and public health websites, or drawing from their expertise. This variance results in an inconsistent approach to teaching nutrition, with each

teacher curating content independently, potentially contributing to varied and conflicting understandings of nutrition among students.

The interviews conducted underscored a common theme among teachers: a perceived lack of training and information, particularly concerning sensitive topics within nutrition education such as culturally responsive solutions, eating disorders training, and understanding how to talk about food in a manner that does not influence students' perceptions of food as either good or bad. Participants in this study highlighted the necessity of curricula, books, and classroom materials for nutrition and physical education. Additionally, they identified various community organizations—including grocery stores, local businesses, healthcare facilities, Healthy Start programs, parks and recreation departments, colleges and universities, and parents and families—as potential resources to explore.

The lack of standardization in nutrition education is not unique to Ontario; it is a common issue across the United States as well as outside of North America (Hall et al., 2016; Cotton et al., 2022). Research suggests that this lack of standardization can come from various factors. In line with the findings in Dundley et al.'s (2015) study, elementary teaching staff do not have access to an abundance of resources, and may not have the expertise, background, or motivation to deliver this evidence-based nutrition education. This suggests that from one teacher to the next, information can be different based on the resources used, the information researched, and the motivation to teach nutrition (Cotton et al., 2020). Also noted is that nutrition education is often not seen as a priority or necessary because it does not include standardized tests, such as those in the math and language curriculum (Cotton et al., 2020).

Ultimately, this inconsistency can have a major impact on the lifelong dietary habits of children (Cotton et al., 2020). Relating to the findings of this research, important differences exist in the language used between teachers, such as one stating “you are what you eat”, and the next using “food as fuel” as their motto. Recent systematic reviews and meta-analyses indicate that nutrition education initiatives conducted in elementary schools have the potential to enhance children's energy intake, consumption of fruits and vegetables, reduction in sugar intake, and improvement in nutritional knowledge (Murimi et al., 2018, Peralta et al., 2016). Thus, it becomes problematic

when one teacher promotes “food as fuel”, while the other promotes “you are what you eat”. This discrepancy may negatively impact those children in these classes whose teachers use negative language. Consequently, this could contribute to nutritional and health disparities amongst children in the same school, perpetuating unequal access to healthy habits and potentially affecting their overall present and long-term well-being.

Existing literature suggests that providing teachers with professional development days, workshops, and training in nutrition education significantly enhances their self-confidence in teaching nutrition (Cotton et al., 2020). This, in turn, contributes to an improved understanding of nutrition among students, fostering a more consistent and effective approach to teaching the subject (Cotton et al., 2020). The findings of Prelip et al.’s (2006) investigation indicate a need for increased teacher in-service training and additional resources to support nutrition education and physical education. Research suggests that in-service training can enhance the implementation of health education initiatives (Marianne et al., 1998) and boost teachers' confidence in delivering health education. Furthermore, the availability of resources such as curricula, textbooks, equipment, and facilities significantly influences teachers' capacity to conduct health education (Marianne et al., 1998). As reflected in this research study, teachers noted the lack of resources they are provided, impacts their willingness, confidence, and eagerness to teach nutrition education to impressionable children.

In sum, the findings of this study strongly point towards the recognition of a substantial need for targeted professional development initiatives tailored to empower teachers in the realm of nutrition education, such as the implementation of workshops during professional development days and training sessions designed to address the specific challenges highlighted by teachers. These sessions should not only cover essential nutrition knowledge but also foster confidence and competence in addressing sensitive topics within the classroom. To bridge the gap in teachers' knowledge, it is suggested that professional development days incorporate sessions led by nutritionists or dietitians. These experts can provide up-to-date information on current nutrition topics and offer valuable insights into effective strategies for communicating sensitive information to students.

5.2 Supporting Teachers Navigating Nutritional and Economic Disparities and Inequalities

The importance of targeted support for teaching practices that address disparities and inequalities among students, particularly those coming from diverse socioeconomic backgrounds, was underscored during interviews. The findings of this study highlighted teachers sharing heartbreaking instances where they had to send students home with groceries over the weekends or during long breaks such as Christmas and March break. Moreover, teachers discussed the frequency with which students in their classes arrived with limited food access and options, sometimes without even lunch or snacks. They also noted the difficulty of discussing the food guide or promoting fresh produce when many students in their classes had limited access and options, with some relying on food banks. Additionally, teachers expressed apprehension about conducting food drives that involved competitions to donate the most food, as many students in their classes depended on these food banks regularly. The shame that can arise from these competitions can exacerbate feelings of inadequacy and stigmatization among students who rely on food banks for essential supplies. It is important to highlight the overwhelming recognition among teachers that it is challenging to utilize the provided resources and adhere to the curriculum when it doesn't accommodate all socioeconomic backgrounds in their classrooms. This underscores the need for more inclusive approaches to curriculum development and resource allocation to mitigate the potential negative impacts on students experiencing poverty or food insecurity. Students' experiences of food insecurity are not only breaking the hearts of teachers but also seem to be breaking the teachers themselves. In this research study, teachers expressed immense emotions and personal feelings of stress when thinking and taking care of children in their classes with food insecurity. Moreover, some teachers went above and beyond providing gift cards for grocery stores during holidays and packing extra lunches for these students.

Current research done by Elliot et al. (2023) underscores the heightened stress levels experienced by teachers working in schools in areas marked by low socioeconomic status, with many students facing poverty. This stress is particularly pronounced in schools where teachers contend with elevated job demands, limited resources, and distinct challenges (Bottiani et al., 2019). For

instance, a recent study conducted in the US by Herman et al. (2018) on 121 urban elementary school teachers revealed that 93% reported experiencing high levels of stress. This stress not only impacts teachers' job performance but also has repercussions on student achievement (Greenberg et al., 2016). This can be related to the overall experience of teaching any subject in the school, but this level of stress becomes heightened when faced with sensitive subjects such as nutrition and eating (Cotton et al., 2020). The background regarding the current curriculum highlights a notable deficiency: the absence of strategies or specific resources tailored to address equity and socioeconomic status within the curriculum's framework for teaching nutrition.

It is crucial to ensure that resources for students and teachers are inclusive and accessible, regardless of economic status, to prevent any students from feeling excluded or stigmatized. This inclusivity extends to developing materials that cater to all socioeconomic levels, ensuring that children in the class do not feel marginalized if they lack experiences such as shopping in a fresh produce aisle, despite dietary recommendations suggesting otherwise (Cohen et al., 2021). Educators can cultivate a more inclusive learning environment where every child feels valued and supported in their journey toward developing a healthy body image and nutrition awareness (Cohen et al., 2021).

To effectively address this challenge and provide improved support for teachers catering to students from diverse socioeconomic backgrounds, it is imperative to establish comprehensive support systems. Reassessing budget allocations is crucial to ensure ample funding for developing resources and implementing enhancements in nutrition education. Moreover, acknowledging the lack of sensitivity and specific guidance within the current curriculum regarding equity and resources for teachers teaching the "healthy eating" component underscores the necessity for more nuanced support mechanisms. Targeted assistance to educators, including professional development opportunities focused on culturally sensitive teaching strategies, and access to mentorship programs or peer support networks, can empower teachers to overcome challenges collaboratively. Policymakers should explore initiatives aimed at streamlining resource development and distribution through centralized platforms or collaborative projects, thereby reducing the burden on individual teachers and ensuring consistency in content delivery. By investing in comprehensive support systems, including budget allocations for resource

creation, professional development opportunities, and policy advocacy, policymakers can empower teachers to effectively address food insecurity and emotional challenges for children in their classrooms, fostering a more equitable and inclusive learning environment.

Overall, the core message received from teachers was that they are struggling. Many teachers are struggling to produce resources for nutrition education. Some teachers lack the confidence to teach this sensitive subject to children. Others are struggling to ensure they are helping to create healthful habits and relationships with food in the face of serious economic inequalities, food insecurity, and cultural norms around body image. The development of resources for handling sensitive topics could better prepare teachers and build their confidence in delivering lessons and content to their students surrounding nutrition. The current Ontario curriculum for grades 4-8 lacks the necessary language and definitions for teachers to incorporate into their lessons. Further, it lacks actual resources for teachers to use within their classrooms. It is necessary to have a more standardized approach for children to learn, so that each classroom is receiving similar content and, avoids language and teachings that can generate harmful lifelong habits and understandings of food and nutrition.

5.3 Importance of a Food-Neutral Approach

In discussions with teachers, a multitude of concerns regarding sensitivity issues surrounding body image eating disorders and disordered eating emerged. Teachers shared concerns about how young girls discuss their bodies, citing examples such as using measuring tapes in the classroom to measure their waist size. Educators shared observing negative associations towards body image and food in conversations overheard in the halls and playgrounds, highlighting the prevalence of a non-food neutral approach and a lack of body positivity amongst their students. Teachers expressed during the interviews that there is an abundance of disordered eating behaviours and eating disorders among young girls specifically, but even more worrisome for participants is the fact that these behaviours begin at a much younger age. The recurrence of concerns expressed, and observations made by teachers related to the challenge they face in teaching nutrition amidst body image, eating disorders, and disordered eating concerns, flags this theme as an important one to address towards improving effective nutrition education in Ontario.

The potentially harmful impact of nutrition education on children's lifelong understanding of food is supported by epidemiological studies showing that the incidence of eating disorders among young girls has increased over the last 50 years, with the prevalence rate being 48% among girls (Murmi et al., 2003). As reported in the literature today, more than ever young adolescent girls are prone to concerns with their weight, size, body shape, and body image because of diet mechanisms to lose weight (Murmi et al., 2003). Globally, reported eating disorder prevalence has increased from 3.5% to 7.8% from 2000-2018 (Galmiche et al., 2019). Finally, not only are eating disorders a blip of one's lifetime, but the overall lifetime prevalence of eating disorders is estimated to be 8.6% among females, and 4.07% among males (*Eating Disorders and the Academy for Eating Disorders, 2020*). Ultimately, these data confirm not only a need for more professional development training and support for teachers but also training that is directed towards a food-neutral approach. Defined food neutrality relates to focusing on taking the attention away from the benefits or consequences of food items (Hamel, 2022) and more towards creating a non-judgmental environment for children to feel safe eating a variety of foods (Hamel, 2022).

Educational policymakers must consider developing strategies to support teachers in delivering nutrition education or establishing a food-neutral approach. This would ensure that the risk of overlooking discrepancies in teaching methods does not affect children's lifelong understanding of food. This could also mitigate the development of disordered eating and eating disorders in children by taking the attention away from the benefits or consequences of food items and creating a non-judgmental environment for children to feel safe eating a variety of foods (Hamel, 2022). A solution to advert this discrepancy in how nutrition is taught is suggested by an expert in the field who has provided some specific ways to implement food neutrality (Hamel et al., 2022). These include: (1) presenting foods as all acceptable or equivalent; (2) Avoiding grouping foods as “good” or “bad” or “healthy or “unhealthy”; (3) Calling food by their names, for example, instead of calling food a “treat” call it a “chocolate bar”; (4) Describe foods objectively based on things like colour, texture, and flavour; (5) Replacing food rewards with non-food rewards (e.g., extended recess, music, dance parties); (6) When children try new foods avoid praising them, congratulating someone for eating a certain food still feels like pressure even

though the reinforcement is positive. Instead, use neutral sentences by saying “I see you tried the food, did you like it?”; (7) Allow kids to eat all foods they bring or have in whatever order they prefer; (8) Focusing on providing opportunities to learn about safe food handling, food skills, and exploration of various foods; (9) Role modelling flexible eating habit (Hamel, 2022). Ultimately, the adoption of a food-neutral approach in the current nutrition education may be an important first step to improving children’s understanding of food, while minimizing potentially harmful or less intentionally food-neutral nutrition education, and actively countering societal influences that build unhealthy relationships with food.

‘Healthy eating’ is the word expression used to describe the “nutrition” component in the current curriculum, which counteracts a food-neutral approach. It seems evident that addressing the issue of body image concerns and disordered eating behaviours among young girls requires a multifaceted approach. As such, my recommendations focus on empowering teachers with the tools and knowledge necessary to promote a food-neutral environment in educational settings. Firstly, I propose the implementation of comprehensive professional development training sessions aimed at equipping teachers with strategies to promote food neutrality in the classroom. This training should include guidance on refraining from labelling foods as "good" or "bad" and instead encouraging a non-judgmental approach towards all foods. Incorporating methods such as describing foods objectively based on their sensory attributes and replacing food rewards with non-food alternatives can help foster a healthier relationship with food among students. Additionally, advocating for a curriculum that emphasizes safe food handling, culinary skills, and exploration of diverse foods, while promoting flexible eating habits through positive role modeling, is essential. By prioritizing these recommendations, educators can play a pivotal role in shaping children's lifelong understanding of food and mitigating the risk of perpetuating harmful societal influences on body image and eating behaviours (Haqq et al., 2021).

5.4 Limitations and Strengths

This study adhered rigorously to ethical considerations and maintained high-quality methodologies in its pursuit of uncovering insights. The robust framework established for data collection, analysis, and interpretation aimed to uphold the integrity of the research process. However, as with any scientific inquiry, it is essential to acknowledge the presence of certain limitations that warrant attention and reflection. In this section, I candidly outline these constraints while also highlighting the strengths that underscore the validity and contribution of this research.

Limitations

Limited Sample Diversity

One of the limitations of the study is that most (92%) of the participants were female-identifying teachers. This may have restricted the range of perspectives and experiences captured. Specifically, there may be a gender bias: female-identifying teachers might have unique insights and experiences related to teaching nutrition, which might not reflect the experiences of their male-identifying counterparts. Despite this limitation, it is noteworthy that the results reached saturation, indicating richness and depth in the qualitative experiences captured, thereby enhancing the robustness of the findings.

Self-Reporting Bias

One notable limitation of the study concerns the potential influence of self-report bias, a phenomenon where participants may not provide accurate responses to questions due to various reasons. In qualitative research, particularly when utilizing semi-structured interviews, participants often share insights based on their personal experiences and perspectives (DeJonckheere & Vaughn, 2019). This introduces the possibility of response bias, where participants may inaccurately report their thoughts or behaviours due to factors such as social

desirability, the Hawthorne effect, or demand characteristics (Berkhout et al., 2022).

To address this limitation, efforts were made to create an open and non-judgmental interview environment that encouraged candid responses. However, despite these precautions, it is important to recognize that self-report bias may still have influenced participants' responses to some degree. Nevertheless, this study aimed to mitigate the impact of bias through meticulous data collection, analysis, and interpretation. Researchers remained vigilant in critically assessing the findings within the context of potential biases inherent in self-reported data. This approach facilitated a more nuanced and accurate understanding of teachers' experiences in teaching nutrition, despite the limitations posed by self-report bias.

Possible Recall Bias

This study is inherently reliant on teachers' recollections of past experiences, teaching practices, and the impact of nutrition education on students. However, a notable limitation is the possibility of recall bias. Recall bias occurs when participants have difficulty accurately recollecting events, experiences, or details from the past (Althubaiti., 2016). In this case, teachers may face challenges in recalling specific incidents, the timing of events, or the precise effects of nutrition education on their students. To address this limitation, participants were encouraged to provide as much detail as possible, while the research team employed probing questions to prompt memory recall.

Strengths

In-Depth Insights

By utilizing semi-structured interviews as the primary data collection method, the study offered a major advantage by allowing open-ended discussions. Specifically, this approach allowed for participants in this case teachers to express and open freely, which provides an in-depth insight into their experiences and perspectives regarding the delivery of nutrition lessons, and the overall school environment's impact on children's understandings of food. When conducting a semi-structured interview, it allowed for a comprehensive review and understanding of teachers' experiences which enriched the data and provided nuanced information. The interview allowed for quotes and summaries used within the analysis to analyze themes and major sub-themes.

Unique Perspectives

Another standout strength of this research lies in its distinctive focus on teachers' experiences and insights into the perspective it has on children's understandings of food and nutrition. While other literature focused on how to improve teachers' teaching and support this research continued further into what they perceive as the impact on children. This original perspective contributes a fresh angle to the body of knowledge on nutrition education's impact on children. The study's unique vantage point allows for a deeper exploration of how teachers' personal experiences and teaching strategies influence the delivery and impact of nutrition education specifically on children.

Real World Application

The researcher's commitment to investigating the real-world implications of nutrition education in school environments is a noteworthy strength. By exploring the actual practices and experiences within schools, the study's findings are highly applicable to educational settings. This real-world relevance is essential for informing educational policies, curriculum design, and teaching practices, enhancing the practical value of the research.

Qualitative Depth

Qualitative research, employed in this study was particularly well suited for delving into the complex and nuanced topics of nutrition education and its perceived impact on children. Qualitative methods are useful for the discovery of subtle yet critical dimensions of teaching nutrition, where personal experiences, stories, and lived experiences gain the depth needed to understand this phenomenon. In contrast, quantitative methods will overlook valuable personal lived experiences, and quotations and potentially miss the depth of understanding that is gained through qualitative methods. It is invaluable in uncovering the multifaceted aspects of nutrition education and its effects on children.

Summary

In the methods section, I have outlined a comprehensive research approach that aimed to investigate the lived experiences of teachers while teaching nutrition education, as well as their perceived impact on the children in their classes. A qualitative research approach was employed to explore the multifaceted relationship between nutrition education, teacher perspectives, and the perceived impact on student wellbeing. Semi-structured interviews served as the primary data collection method, fostering in-depth conversations with teachers to gain rich insights into their experiences and perceptions. Limitations and strengths of the study are included, while the importance of reflexivity during this work is expressed .

Chapter 6

6.0 Conclusion

Schools play a significant role in teaching nutrition and food literacy to children aged 8-14 (grades 4-8) (Cusick et al., 2016). These environments, influenced by peers, adults, and curriculum, shape students' eating habits and food literacy, impacting them throughout their lives (Cotton, 2020; Critch, 2020). Among the crucial influencers, elementary schools and teachers stand at the forefront of shaping children's nutritional understanding (Cotton et al., 2020). Understanding the pivotal role that elementary schools and teachers play in this process, this thesis fills a research gap by delving into the lived experiences of teachers and their perceptions of the impact of food and nutrition lessons on children in Ontario, an area that has been underexplored in the existing literature. Through an in-depth examination of teachers' perspectives, challenges, and emotional experiences in elementary schools, this research offers valuable insights, enhancing our understanding of the challenges and complexities of delivering effective nutrition education practice to young students.

The findings of this study illuminate crucial dimensions of Ontario teachers' experiences in teaching nutrition education to elementary-aged children. In exploring teachers' journeys (Objective 1), distinct themes emerged, encompassing their perceived role as educators, and the challenges and facilitators to teaching nutrition which ultimately revealed impacts on students. The multifaceted theme of " Teachers' Perceptions of Their Role in Nutrition Education" revealed teachers as not only instructors but also role models for shaping children's understanding of food. Theme 2, "Navigating obstacles and facilitators to teaching nutrition underscored the complex interplay of factors like sensitivity, food insecurity, cultural influences, body image, eating disorders and disordered eating habits, scarce curriculum and resources, time constraints, influences from the home, and perceived confidence and competence highlighted the need for nuanced support mechanisms. These findings collectively provide a tapestry of insights, paving the way for targeted support initiatives and curriculum enhancements that address the diverse challenges faced by teachers in nurturing children's comprehension of food and nutrition.

Moreover, the study illuminates through specific examples, why it is so important for existing curricula to become more intentionally inclusive of food-neutral approaches so that children have the opportunity to engage with food-related topics without fear of judgment or exclusion, fostering a more inclusive and supportive learning environment. In food-neutral environments, food choices are free from judgment, and biases are unshared, fostering a positive and open atmosphere for both educators and students. This in turn can reduce the risk of harm such as eating disorders, and body image issues but also create a neutral environment to mitigate cultural differences, stigma around socioeconomic status and peer judgement in general. This research, therefore, not only highlights the existing dynamics but also provides a pathway for cultivating an inclusive and supportive educational setting, where the principles of food neutrality can be actively embraced and implemented.

This study touched on an important layer of the challenges and complexities surrounding delivering nutrition education to impressionable young children in Ontario's publicly funded schools. Further research involving parents and students in future research would provide a more comprehensive understanding of nutrition education's impact. Parents play a crucial role in shaping children's food perceptions both at home and at school. Understanding their perspectives could offer valuable insights into cultural food practices, body image issues, and effective support strategies. Additionally, conducting a longitudinal study could track the long-term effects of nutrition education on students' dietary choices and understanding of food into early adolescence. Comparing the mandated curriculum with a food-neutral approach using a control group would provide deeper insights into effective teaching methods. Finally, investigating the effectiveness of professional development programs for teachers could enhance their ability and confidence in delivering nutrition education. Specialized training and ongoing support may improve teachers' knowledge and teaching practices, leading to more effective and neutral nutrition lessons. Future research in these areas could refine and expand our understanding of how nutrition education influences students' health and well-being.

In conclusion, it is my fervent hope that this research serves not only as a support mechanism for teachers but also does due diligence to the lived experiences of teachers, and to their perceived impacts on students in their class. As well, I hope this research acts as a catalyst for positive

change and enhanced support within the educational landscape. By shedding light on teachers' experiences and perceptions in the realm of nutrition education, I aspire to contribute to the creation of classrooms that embody positivity, neutrality, and wholesomeness. It is my vision that every child can find comfort in embracing their unique food choices, understanding their food history, and envisioning their future selves. Ultimately, I anticipate that the concept of food neutrality can permeate the school environment, fostering an inclusive and enriching educational experience for all.

“Food is so much more than a plate of nutrients When it's done right, food is well-being.”

Sonya Grier

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Appendices

Appendix A: Comprehensive School Health Model



Appendix B: Qualtrics Eligibility Survey

LINK (that you can view at for now, individual links will be sent per participant):

https://uwo.eu.qualtrics.com/jfe/form/SV_eDMxv0bWNZj5WE6

Western
UNIVERSITY · CANADA

1. Are you a registered teacher in Ontario?

Yes

No

2. Are you a teacher within a publicly funded school?

Yes

No

3. Have you taught any nutrition to children grades 4-8 in the last 5 years? (2018- present).

Yes

No

4. Can you read and write in English?

Yes

No

← →

Appendix C: Semi Structured Interview Guide

Semi-Structured *Interview Guide*

The primary purpose: The primary purpose of the study is to investigate the impact of nutrition education on children in grades 4-8 from the unique perspective of teachers.

Hello,

Thank you for agreeing to participate in this interview. My name is [Research Assistant] Ashley Vito, and I am one of the primary researchers along with Anita Cramp and Carla Silva from Western University.

Before starting this interview, we would like to confirm that we have received your consent to conduct the interview. We will be providing you with a copy of the signed letter. Do you have any questions about the information in the letter?

The goal of our research is to explore Ontario teachers' experiences of teaching nutrition and their views on how it can impact elementary children's food literacy.

Our end-goal of this study is two-fold: first we want explore teachers' personal experiences of teaching nutrition education to elementary aged children (grades 4-8). Secondly, we want to explore teacher's perceived understandings of how practices and activities within schools impacts students' food literacy.

A reminder that this interview will be audio-recorded. However, should you choose not to be audio-recorded, handwritten notes will be taken during this interview. As a reminder, the transcript, and notes of today will be de-identified and kept confidential, any identifying information will be removed, and your answers will be anonymous in the research study. Are there any questions?

Participation in this interview is completely voluntary and you may choose to stop the interview at any time. Before we start, do you have any questions?

Proposed Objective	Example Questions
<p>OBJECTIVE 1</p> <p>Teachers lived Experiences</p> <p>To explore educators' personal experiences of teaching nutrition education to elementary aged children</p> <p>I am going to ask you questions about your</p>	<p>1. Can you tell me about how you learned about food and nutrition?</p> <ul style="list-style-type: none"> ○ Personal views ○ Where/when ○ Was it important to you? ○ Do you use your own personal views and understandings when teaching nutrition? ○ Background? ○ Can you tell me when and how you started to think/learn about nutrition?

<p>thoughts and experiences teaching nutrition.....</p>	<ul style="list-style-type: none"> ○ Do you use/ how much of your teaching related to nutrition is used from this? ^^ <p>2. Describe your teaching philosophy when teaching nutrition.</p> <ul style="list-style-type: none"> □ What are some of the values, beliefs, and goals you are trying to get across to your students when you teach nutrition? <p>3. Can you describe how you define, or understand nutrition?</p> <ul style="list-style-type: none"> ○ Define it? ○ What are your understandings? ○ What does nutrition encompass for you? ○ How do you define healthy eating? <p>4. I would like to learn a little bit more about your approach to teaching nutrition lessons, how do you prepare?</p> <ul style="list-style-type: none"> □ Approximately how many lessons do you spend teaching nutrition? □ Are they all taught within nutrition units or do you teach nutrition within other subjects? □ Describe what materials you use to teach the nutrition curriculum? □ Where do you find your resources? □ Describe what helps and would help you teach the nutrition curriculum? □ Can you describe how you stay up to date on nutrition practices? □ I'm a student in your class, give me an example. □ Can you give me examples of strategies? □ I'm a student in your class, give me an example. □ Can you give me examples of strategies? <p>5. Describe what it means to teach nutrition education to you?</p> <ul style="list-style-type: none"> ○ Can you think of 3 words that come to mind when you think about your experience of teaching nutrition education to you? ○ Tell me a little bit more about why you selected those words? ○ Can you give me examples? ○ How do you feel about teaching nutrition? ○ Emotionally? ○ ... In terms of confidence ○ In terms of willingness?
---	--

	<p>6. Can you share a negative or positive experience you have had teaching nutrition in the classroom and school environment?</p> <ul style="list-style-type: none"> ○ So, what exactly in that experience felt (negative or positive to you)? ○ Have you had any ____ repeat. ○ Can you describe a day when teaching nutrition education was challenging? ○ Is there anything else you want to add about that experience, or should we move on? ○ What made it a challenge? ○ Can you recall a specific comment from a student? ○ Strategies to overcome these challenges. <p>In all the teaching of nutrition you have done, what is a lesson or activity that you believe had a great impact on the children in the classroom?</p>
<p>OBJECTIVE 2</p> <p>IMPACT On Children</p> <p>To explore teacher's perceived ideas of how practices and activities within schools impacts students food literacy</p> <p>I am going to as you question about how you perceive activities and practices within your school impacting student's food literacy...</p>	<p>1. What other activities and practices related to nutrition, happen in your school and are occurring in your school?</p> <ul style="list-style-type: none"> <input type="checkbox"/> Is there a breakfast or food program. <input type="checkbox"/> Is food used as fundraisers, if so, how? <input type="checkbox"/> Is there outside food allowed in the classroom? <input type="checkbox"/> Are there any food-related policies? <input type="checkbox"/> Is there a practice of food being used as a reward for the school. <input type="checkbox"/> Are there food rules during lunch? <p>2. How do you feel about these activities?</p> <ul style="list-style-type: none"> <input type="checkbox"/> Do you feel any of these activities or practices can be beneficial or harmful? <input type="checkbox"/> Can you recall a time when a student has been influenced by a nutrition education lesson? <p>3.. Can you recall a time when the overall food environment in the school has impacted students?</p> <ul style="list-style-type: none"> <input type="checkbox"/> In terms of the social norms <input type="checkbox"/> In terms how nutrition is suggested to be taught <input type="checkbox"/> In terms of when what and how much students eat? <p>4. Describe a time when a student brought forward a sensitive question with respect to food and nutrition practices within the school environment?</p> <ul style="list-style-type: none"> - how did you react? - what happened next?

	<ul style="list-style-type: none"> - what about that felt sensitive to you? - did you feel satisfied with how things went? - Do you think things could have gone differently - How could you have been better supported to address this situation? Would anything have made it easier in that situation for you as a teacher? <p>5. Can you tell me about a time when an activity or a lesson has impacted a student</p> <ul style="list-style-type: none"> <input type="checkbox"/> Positively <input type="checkbox"/> Negatively <input type="checkbox"/> Describe a time when a student brought forward a sensitive question regarding the food and nutrition curriculum? <p>What are you proud, impact, activity or approach you use that you feel good about when teaching nutrition</p>
Demographic Questions	<ol style="list-style-type: none"> 1. How long have you been teaching for? 2. What is your age? 3. What did you go to school for in your undergrad? 4. What gender do you identify with?

Appendix D: Final Ethics Application Approval



Date: 21 August 2023

To: Dr Carla Silva

Project ID: 123154

Study Title: Elementary School Teachers Lived Experiences of Teaching Nutrition: A Qualitative Study

Application Type: NMREB Initial Application

Review Type: Delegated

Full Board Reporting Date: 08/Sep/2023

Date Approval Issued: 21/Aug/2023 09:44

REB Approval Expiry Date: 21/Aug/2024

Dear Dr Carla Silva

The Western University Non-Medical Research Ethics Board (NMREB) has reviewed and approved the WREM application form for the above mentioned study, as of the date noted above. NMREB approval for this study remains valid until the expiry date noted above, conditional to timely submission and acceptance of NMREB Continuing Ethics Review.

This research study is to be conducted by the investigator noted above. **All other required institutional approvals and mandated training must also be obtained prior to the conduct of the study.**

Documents Approved:

Document Name	Document Type	Document Date	Document Version
Research Protocol-Cramp.Vito	Protocol		
Recruitment Script	Recruitment Materials	18/Jul/2023	1
Interview Question Guide	Interview Guide	18/Jul/2023	3
Debriefing Email 3.0	Debriefing document	13/Aug/2023	3
Recruitment Poster Final	Recruitment Materials	13/Aug/2023	3
Email Script for Screening Process	Screening Materials	13/Aug/2023	1
Eligibility Qualtrics- Final	Screening Form/Questionnaire	13/Aug/2023	1
LOI - final copy	Written Consent/Assent	13/Aug/2023	5
Consent Form- final	Written Consent/Assent	13/Aug/2023	4

Documents Acknowledged:

Document Name	Document Type	Document Date	Document Version
List of Support Services	Other Materials	18/Jul/2023	1

The Western University NMREB operates in compliance with the Tri-Council Policy Statement Ethical Conduct for Research Involving Humans (TCPS2), the Ontario Personal Health Information Protection Act (PHIPA, 2004), and the applicable laws and regulations of Ontario. Members of the NMREB who are named as Investigators in research studies do not participate in discussions related to, nor vote on such studies when they are presented to the REB. The NMREB is registered with the U.S. Department of Health & Human Services under the IRB registration number IRB 00000941.

Please do not hesitate to contact us if you have any questions.

Sincerely,

Ms. Katelyn Harris, Research Ethics Officer on behalf of Dr. Isha DeCoito, NMREB Chair

Note: This correspondence includes an electronic signature (validation and approval via an online system that is compliant with all regulations).

Appendix E: Recruitment Poster

**CALLING FOR RESEARCH PARTICIPANTS WHO ARE****ELEMENTARY TEACHERS IN GRADES 4-8****TEACHERS WHO ARE OR HAVE TAUGHT NUTRITION TO GRADES 4-8 IN THE LAST 5 YEARS****TEACHERS WITHIN A PUBLICLY FUNDED ELEMENTARY SCHOOL**

We are looking for volunteers to take part in a study to explore Ontario teachers' experiences of teaching nutrition and their views on how it can impact elementary children's food literacy.

If you are interested and agree to participate you would be asked to: participate in a 60-90 minute zoom interview sharing your experiences.

Appendix F: Qualtrics Consent Form

LINK: https://uwo.eu.qualtrics.com/jfe/form/SV_0wht73JdOYc59RQ

LOI is shown first, and once the arrow is clicked this is the flow:



Please Provide your name (only viewed by the research team)



Appendix G: Letter of Information

LETTER OF INFORMATION AND CONSENT

Study Title: Elementary School Educators Lived Experiences of Teaching Nutrition: A Qualitative Study

Research Team:

Name of Principal Investigator: Anita Cramp PhD, Ashley Vito (BHSc), MSc Candidate, Western University

Co-Investigators: Carla Silva PhD, Elysee Nouvet PhD.

Contact Information:

Ashley Vito MSc Candidate

Anita Cramp PhD, Professor, Western University

Carla Filomena Silva PhD Professor, Western University

Elysee Nouvet PhD Professor, Western University

Thank you for your interest in participating in this research study. Before you decide whether to participate, the researchers would like you to read some important information about the study.

**Please note that this survey will be best displayed on a laptop or desktop computer. Some features may be less compatible for use on a mobile device.*

Invitation to Participate

You are being invited to participate in this research study investigating Ontario teachers' experiences of teaching nutrition and their views on how it can impact elementary children's food literacy, because you are an Ontario Elementary School Educator who has taught nutrition to children in grades 4-8 within the last 5 years (2018- now). The purpose of this study is to explore Ontario teachers' experiences of teaching nutrition and their views on how it can impact elementary children's food literacy.

Purpose of the Letter

The purpose of this letter is to provide you with information required for you to make an informed decision regarding participation in this research study.

Background/Purpose:

Food literacy is defined as, "a set of skills and knowledge related to food, which enables people to make informed choices about food and nutrition for improving their own health" (Truman, et al., 2017). Research indicates that learning about food and nutrition early in life sets the foundation for healthy behaviours, a range of skills and learning abilities that progress through a child's lifespan. Although food literacy for children can come from a

variety of sources, it has been reported that elementary schools represent a key organization that are known influence children's healthy growth and development, and understandings of nutrition education. As indicated by research in school environments generally, nutrition and food literacy is taught by educators as part of the school curriculum and can play a role in shaping children's understandings and food choices. The everchanging nutrition information in today's society increases the complexity of teaching nutrition. The purpose of this study to explore Ontario teachers' experiences of teaching nutrition and their views on how it can impact elementary children's food literacy. The objectives of the proposed research are as follows: (1) To explore teachers' personal experiences of teaching nutrition education to elementary aged children (grades 4-8). (2) To explore teacher's perceived understandings of how practices and activities within schools impacts students' food literacy.

Inclusion Criteria

To be eligible for the study, participants in the study you need to:

- Be a registered Teacher in Ontario
- Taught nutrition education to children grades 4-8 within the last 5 years.
- Teach within a publicly funded elementary school
- Be able to read and write in English

Exclusion Criteria

- Individuals will not be accepted to participate within the study if they are not a registered teacher in Ontario, have not taught any form of nutrition education within the last 5 years to children grades 4-8 and if they are unable to read and write in English.

Study Design:

The research team is aiming to recruit 10-14 participants for this study (I.e., n=10-14)

- Those interested in participating in the research will be asked to email the lead researcher, which will only be used to coordinate participation in the interviews.
- Participants will only be contacted for participation if they meet the eligibility criteria.
- The eligible participants will all be interviewed in 60–90-minute semi structured interviews.

Procedures:

If you agree to participate you will be asked to:

- Fill out the online questionnaire (Qualtrics), to confirm your eligibility.
- Wait for an email wait for an email to consent to participate in the research (this will take about 5 minutes to read and consent).
- Respond to an email from the primary researcher to organize an online interview time. (This will take approximately 2 minutes).

- Confirm the interview time once you receive two reminder emails regarding your interview time, date, and location (online, platform) link.
- Participate in individual conversation/interview with the primary researcher on an online platform scheduled at your convenience (likely duration: between 60 minutes to 90 minutes). The interview will ask you about your thoughts and experiences teaching nutrition, as well as how you perceive activities and practices within your school impacting student's food literacy.
- Upon completion of the interview, the participant will be thanked for their time.

**Audio recording will be used, if you do not consent to this, please know that your participation will be included, and the researcher will hand write or type the responses.*

Location and time of the study activity Online videoconferencing (zoom) at a time of your choosing.

Voluntary Participation

You may refuse to participate in any of the activities proposed at any time. (This is mentioned again below).

Withdrawal from Study

At any point in time, you are free to withdrawal from the study.

- If you decide to withdraw from the study, you have the right to request (e.g., by phone, in writing, etc.) withdrawal of information collected about you. If you wish to have your information removed, please let the researcher know and your information will be destroyed from our records. Once data analysis is completed, we will not be able to withdraw your information.
- If you decide to withdraw from the study, you may do so at any time before expected data analysis date of March 1st, 2024.

Risks

There are no known or anticipated risks or discomforts associated with participating in this study. However, if any of the questions or interviews create emotional discomfort, resources have been provided below:

1. *General Mental Health Support* (<https://www.ontario.ca/page/find-mental-health-support>)
2. *Mental Health Helpline* (1-866-531-2600)
3. *211 Ontario* (1-877-330-3213)
4. *London Mental Health Crisis Service* (519-433-2033) - Available 24/7 for crisis counselling and empathetic listening.
5. *The Support Line* (519-601-8055) - Provides confidential listening and support to individuals 16+ any time of day or night – whether anxious, depressed, lonely overwhelmed, or just need to talk something through with someone.

The time required to complete the eligibility criteria and the consent form may pose as a potential inconvenience for participants. In addition, it is important to note that when personal identifiers are collected, there is always the risk of breach of privacy.

Benefits

There are no direct benefits to you by participating in this research. However, by participating in this study you are contributing to our efforts to understand the potential impact nutrition education and the larger school environment has on elementary aged children, which may help better address, and inform strategies for improvement in the future.

Reminders and Responsibilities

By accepting to participate in this study, you agree to

- Being contacted via email for reminders, information, and potential follow up information.
- Being a participant within this research study.
- Participating within a 60–90-minute online interview.
- Agreeing to the potential risks indicated above.

Confidentiality

Emails and names will only be collected through the Letter of Consent (LOI/C) and will be stored securely on Western OneDrive during the data retention period of 7 years. After the retention period expires, these emails and names will be permanently deleted from Western OneDrive. Similarly, audio/voice recordings from interviews will also be stored on Western OneDrive for a period of 7 years and will be deleted thereafter. Transcripts generated from the interviews will not contain any personally identifiable information. The demographic survey responses will be anonymized and will not be linked to specific participants. Once the data retention period of 7 years is complete, the demographic survey data will be permanently deleted from Western OneDrive, and the trash folder will be emptied to ensure complete removal.

Any direct personal identifiers will be retained in a master list, stored separately from the study database. Any identifiable study information (e.g., master list, email addresses, etc.) will be stored on an institutional drive and will be accessed remotely (via Western's Microsoft Teams) by the research team. All data collected will remain confidential and accessible only to the investigators of this study. While we do our best to protect your information, there is no guarantee that we will be able to do so. We are collecting some sensitive information. For example, we are collecting demographic information (e.g., how long have you been teaching for, what school board, age, what did you go to school for in your undergrad, what gender you identify with), during the semi structured interview. These identifiers will be collected for the purposes of descriptive statistics and understanding the population/cohort that is being studied.

After a minimum of 7 years, all data will be destroyed, including the master list of participant IDs. By participating in this research, you agree that the results may be used for scientific purposes, including publication in scientific journals. No individual information will be reported. Only group-level and aggregated data will be reported.

The researcher recognizes the potential value of personal quotes or lived experiences in adding depth and authenticity to the research findings. In the event that such information is considered for inclusion in publications or other forms of content, explicit consent will be sought from participants. To facilitate this, a check box will be provided on the Consent Form, allowing participants to indicate their willingness for their quotes or information to be used. Once again, these quotes will not have names, or identifying information connected to them. This ensures transparency and allows participants to make an informed decision regarding the utilization of their personal content in an anonymized or identifiable manner.

Delegated institutional representatives of Western University and its Non-Medical Research Ethics Board may require access to your study-related records to monitor the conduct of the research in accordance with regulatory requirements.

The informed consent information is being collected via Qualtrics, a widely used online survey tool. Qualtrics provides a convenient platform for data collection, and it is important to note that no online tool can guarantee 100% security. As noted by research ethics, data transmitted over the internet always carries some inherent risks. Qualtrics has implemented measures to ensure data privacy and security, including encryption and data protection protocols. However, it is essential to acknowledge that there is always a small possibility of unauthorized access or data breaches. To learn more about Qualtrics' privacy practices, you can refer to their privacy policy available at [\[https://www.qualtrics.com/privacy-statement/\]](https://www.qualtrics.com/privacy-statement/) It is also worth mentioning that Qualtrics servers are located in Ireland. Despite these measures and precautions, it is important to recognize that no online platform can offer absolute security when handling personal information.

As a participant, it's important for you to know that your email address will be collected for the purpose of sending you a personalized link through Qualtrics, our secure survey platform. This link is essential to provide you with access to the eligibility questionnaire. Your email address will only be used for this specific purpose and will not be shared with any third parties. Your privacy and data security are of utmost importance to us, and we assure you that all necessary measures will be taken to protect your information. If you have any concerns or questions about this process, please feel free to contact us. Your participation and insights are highly valued, and we appreciate your understanding.

Compensation: You will not be compensated for your participation in this research.

Rights as a Participant:

Your participation in this study is voluntary. You may decide not to be in this study. Even if you consent to participate, you have the right to not answer individual questions or to withdraw from the study at any time. If you choose not to participate or to leave the study at any time, it will have no effect on your [employment status]. You do not waive any legal right by consenting to this study.

Questions about the Study

If you require further information regarding this research project or your participation in the study, you may contact the primary investigator: Ashley Vito BHSc, MSc Candidate

If you have any questions about your rights as a research participant or the conduct of this study, you may contact The Office of Human Research Ethics (519-661-3036). For non-local participants you may contact: 1-844-720-9816, email: ethics@uwo.ca.

Curriculum Vitae

CURRICULUM VITAE

NAME: Ashley P. Vito

DATE: May 28th, 2024

STATUS: Msc. Student

EDUCATION

Degree	University	Department	Year
MSc. Health Promotion	Western University	Health and Rehabilitation Sciences, Faculty of Health Sciences	2022-2024
BHSc. (Honours)	Western University	School of Health Studies, Faculty of Health Sciences	2018-2022

SPECIALTY QUALIFICATIONS/CERTIFICATIONS

Certification	Organization	Date
AODA- Accessibility in Service	Western University	2020
Worker Health and Safety Awareness	Western University	2020
Critical and Ethical Global Engagement	Western University	2020
WHMIS Training	Western University	2020
Foundations for Intercultural Competence & Global Engagement	Western University	2020
Mental Health	Western University	2020
Gender Based Violence Prevention	Western University	2020
Western Safe Campus Community	Western University	2020
AODA Workplace Wellbeing	SCC Country Club	2021
Building Indigenous Cultural Competency (Canada)	Scotia Bank	2021
Introduction to evidence informed Decision Making	National Collaborating Centre for Methods and Tools McMaster University	2022
Evaluating Knowledge Translation Strategies in Public Health	National Collaborating Centre for Methods and Tools McMaster University	2022
Ethical Conduct for Research Involving Humans. Certificate, Panel On Research Ethics	(TCPS 2:CORE).	2022
Searching for Research Evidence. In Public Health	National Collaborating Centre for Methods and Tools McMaster	2022

ACADEMIC EMPLOYMENT HISTORY

Date	Rank & Position	Department	Institution
Sept. 2021 – May 2022	Health Promotion Project Coordination Dr. Anita Cramp	School of Health Studies, Faculty of Health Sciences	Middlesex London Health Unit/Western University
Sept. 2020 – August 2021	Undergraduate Research Assistant Dr. Tara Mantler	School of Health Studies, Faculty of Health Sciences	Western University
September 2022- December 2022	Graduate Teaching Assistant: Population Health Intervention	School of Health Studies, Faculty of Health Science	Western University
September 2022- December 2022	Social Determinants of Health and Disease Tutor	School of Health Studies, Faculty of Health Science	Western University
January 2023-April 2023	Graduate Teaching Assistant: Mental Health and Diseases Across Cultures	School of Health Studies, Faculty of Health Science	Western University
September-January 2023-2024	Graduate Teaching Assistant: Personal Determinants of Health	School of Health Studies, Faculty of Health Science	Western University
January 2024-April 2024	Graduate Teaching Assistant: Health Promotion in Practice	School of Health Studies, Faculty of Health Science	Western University
May 2024-July 2024	Graduate Teaching Assistant: Personal Determinants of Health	School of Health Studies, Faculty of Health Science	Western University

RESEARCH EXPERIENCE**a) Research Assistantships (*N* = 1)**

1. Undergraduate Research Assistant. Dr. Tara Mantler. Project: An Exploration of Trauma- and-Violence Informed Care for Supporting Breastfeeding Practices Among Mothers who are At-Risk: The Experiences of Breastfeeding Social Support. School of Health Studies, Faculty of Health Science, University of Western Ontario

b) Independent Studies (N = 1)

1. Strengthening partnerships Between Public Health Units and District School Board. A knowledge translation report. Undergraduate independent study supervised by Dr. Anita Cramp (2021-2022)

c) Theses (N = 1)

1. Vito, A., Cramp, A. Silva, C. Battrum, D. Nouvet, E. Elementary School Teachers' Lived Experiences of Teaching Nutrition: A Qualitative Study. Master's Thesis supervised by Dr. Elysee Nouvet (2022-2024)

HONOURS AND AWARDS

2023-2024 – Canada Graduate Scholarship
(recipient of \$17,500.00)

2023-2024 – Ontario Graduate Scholarship
(recipient of \$15,000.00 – declined as an individual is not allowed to hold more than one tri-council scholarship concurrently)

2023 – Western Graduate Research Scholarship
(recipient of \$2500.00)

2022- Western Scholar
Western University- London

Recognizes full time students registered at Western who completed their undergrad with an average above 90% during the fall and winter sessions.

2020, 2021 -Dean's Honour List, Faculty of Health Sciences
Western University- London,

2021- Western Undergraduate Community Engaged Learning Award
(Recipient of \$750.00)

Awarded by the Experiential Learning team in The Student Success Centre at Western University, the Community Engaged Learning (CEL) Award aims to acknowledge students who completed an exceptional health promotion program in local and international community development.

2018 -Western Scholarship of Distinction
(Recipient \$1500)

Awarded to students with an entry average of 90% and above.

PUBLICATIONS

I. Publication Summary:

a) Abstracts, Presentations at Professional Meetings/Conferences	3
b) Conferences, Abstracts and Presentations	3
c) Invited Guest Lectures	1
d) Non-Peer Reviewed Knowledge Mobilization Paper	1

a) Abstracts, Presentations at Professional Meetings/Conferences (N=3)

1. **Vito, A.** Cramp, A. Presenter at CODE COMOHO Meeting: Presented integral work done to the board of CODE COMOHO in regards to the current status in the province of the new mandate presented in 2015 to establish a declaration of partnership between school boards and public health units. Presented my study conducted throughout provincial health units to examine the status of partnerships. CODE COMOHO Meeting. March 12th, 2021.
2. **Vito, A.** Cramp, A. Presenter, Ontario School Health Managers Meeting: Presented to the Ontario School Health Managers team across the province on the current status of partnership declarations between provincial School Boards and Public Health Units. Ontario School Health Managers. March, 2021.
3. **Vito, A.** Cramp, A. Presenter CODE COMOHO Meeting. March 12th, 2021. Presented to the Ontario School Health Managers team across the province on the study done regarding the creation and renewal process of the mandated partnership declaration report. Integral in providing both Public Health and School Boards with specific recommendations, barriers and facilitators to creating these important partnerships to benefit the health of children in schools. Ontario School Health Managers.

b) Conferences, Abstracts and Presentations (N = 3)

1. **Vito, A.** Cramp, A. Silva, C. Teachers' Experiences and Perceived Self Efficacy in Teaching and Practicing Nutrition Curriculum to Children K-8. Submitted abstract to Childhood and Health Academic Research Conference. Western University, May 2023.
2. **Vito, A.,** Cramp, A. Silva, C. Battrum, D. Nouvet, E. Elementary School Teachers' Lived Experiences of Teaching Nutrition: A Qualitative Study. Submitted Western Health and Rehabilitation Research Conference. Western University, February 2024.

c) Invited Guest Lectures (N=2)

1. **Vito, A.** Population Intervention, Partnership Declarations, An invited guest lecture to students in HS4250 Population Health Intervention, Western University, London, ON, October 14th, 2022. 40 minutes. N = 40

SERVICE – OTHER SCHOLARLY AND PROFESSIONAL ACTIVITIES

I: Service Summary

a) Mentorship	5
b) School/Department Committees	3
c) Other Service	3

II: Service Details [listed below in reverse order by date]:

a) Mentorship

1. Peer Mentor. Western University, LAMP Mentor. 2019-2020
2. Peer Mentor. Western University, LAMP Mentor. 2020-2021
3. Volunteer Learning it Together. Faculty of Health Science. Western University. 2019-2021.
4. Teaching Assistant, Health Intervention in Practice. Faculty of Health Sciences, Western University, Fall 2022 Term.
5. Tutor. Social Determinants of Health and Disease. Faculty of Health Science, Western University, Fall 2022 Term.

b) School/Department Committees

1. School of Health Studies. VP Communications Student Council Health Science Association. Western University, September 2021- April 2022.
2. School of Health Studies. Senior Advisor. Student Council Health Science Association. Western University, September 2022- April 2023.
3. School of Health Studies. Senior Advisor. Student Council Health Science Association. Western University, September 2023 April 2024.

c) Other Service

1. Course Creator Assistant Medical & Health Sciences. St. Michaels Highschool. 2021.
2. Director of Blog Posts, Simply Nic Nutrition. London Ontario. 2021.
3. Peer Note Taker. School of Health Studies. Western University. 2021.

Ashley Vito

SIGNED _____

DATE:

NAME: Ashley P. Vito