Teacher Perspectives on Whole-School Daily Physical Activity: Strategies to successfully implement DPA

By

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A research paper proposal submitted in conformity with the requirements For the degree of Master of Teaching
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TEACHER PERSPECTIVES ON WHOLE-SCHOOL DPA

Abstract

The research study discussed the challenges, strategies and benefits to Daily Physical Activity (DPA) implementation for students. The literature demonstrates that students in Canada suffer from a variety of mental health, physical health and academic concerns. DPA has been shown to improve each of these aspects of children’s lives. The main topic of research for this study considers elementary school teachers' perspectives on whole-school DPA and its outcomes for students and teachers. To answer this research question, the insights of two elementary teachers who had participated in whole-school DPA were obtained through semi-structured interviews. Teachers face many challenges implementing DPA such as time-management, lack of training and resources, and lack of administrative motivation/assistance. This research concludes that with the proper training, confidence and motivation, and support from the school administration, teachers should be able to implement effective and successful DPA with few resources and little required space.

Key Words: Daily Physical Activity, DPA, Whole-School DPA, School-Wide DPA, Physical Education
Acknowledgments

I wish to acknowledge and thank my family for continuous support during my research process.

- Mom, you always provided encouragement and emotional support.
- Dad, you always dedicated time to provide assistance and academic support.

I would also like to acknowledge my professors who constantly assisted me throughout my research process.
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Chapter 1: Introduction

1.1 Research Context

Children in Canada are faced with many challenges including overweight and obesity issues and mental health concerns (Statistics Canada, 2011; Kids Now Canada, 2015). As youth continue to drastically decrease their participation in physical activity, the rates of overweight and obesity have risen. Approximately 40% of Canada’s youth between the ages of 5 and 17 are considered to be over the ideal / healthy body weight (Statistics Canada, 2011). More specifically, boys are more likely than girls to be considered both overweight and obese as children and youth. Being overweight can lead to premature development and an increased risk of a range of health problems including cardiovascular disease, cancer and stroke (Heart and Stroke Foundation, 2011). Additionally, strong connection can be seen between the physical health of children and the mental health of children, specifically in terms of self-esteem and body dissatisfaction (Steinberg, 2011). Many youth are not content with their physical appearance, due possibly to a lack of physical activity and physical health.

One in every seven Canadian youth will experience some form of mental health issue during his/her childhood (Canadian Mental Health Association, 2014). The most common mental health issues in Canada include anxiety, Attention-Deficit/Hyperactivity Disorder (ADHD), conduct disorder and depression (Canadian Mental Health Association, 2014). Adolescents are also likely to experience feelings of low self-esteem, low self-efficacy and high stress (Canadian Mental Health Association, 2014). Adolescence and preadolescence is an emotionally vulnerable time for students. Children/youth with mental health issues left untreated are at a higher risk of
experiencing mental health issues as an adult (Lahey, 2015). Further, young adults with mental health concerns are at a higher risk of participating in self-destructive or harmful behaviour (Steinberg, 2011).

Daily Physical Activity (DPA) has shown many benefits for school-aged children. Research has demonstrated a variety of mental health, physical health, and academic benefits seen among youth who are physically active each day. DPA can reduce the risk of heart disease and stroke in adulthood by promoting fitness and a healthy body weight in children and youth (Heart and Stroke Foundation, 2011). DPA can help reduce feelings of depression and raise self-esteem among students (Joseph, Royse, Benitez, & Pekmezi, 2014). Students also show success in their academic abilities after participation in DPA as it can enhance concentration and cognitive abilities (Trudeau & Shephard, 2010).

1.2 Research Problem

Research has found that, while Ontario has a requirement of 20 minutes of daily physical activity, teachers are not commonly implementing this policy (Brown & Elliott, 2015). Furthermore, research has identified some key barriers to implementation. These include lack of teacher confidence in their knowledge of physical education, difficulties accommodating the needs of all students, lack of resources and lack of space available (Brown & Elliott, 2015). There are many issues that Canadian youth face including obesity and mental health issues. Students are at a high risk of becoming overweight or obese during their childhood, which can lead to a variety of health concerns in their adult life. One in seven students will experience a mental health concern during his/her childhood (Canadian Mental Health Association, 2014). In addition, many students struggle academically in the classroom. The required 20 minutes of daily
physical activity can help students improve their academic performance in a classroom setting by enhancing memory, focus and retention of information (Trudeau & Shephard, 2010; Steinberg, 2011). It is therefore important to consider why teachers struggle to implement DPA, what obstacles they face, what existing strategies are in place to help teachers and how to optimize the strategies. Understanding the reasons why teachers do not implement DPA can provide insight into effective approaches. As the research suggests, students will experience many benefits from participating in physical activity daily.

1.3 Research Purpose

As seen from the research problem, teachers struggle to implement an essential aspect of the Ontario curriculum, namely daily physical activity. The purpose of this qualitative research study is to learn how a sample of teachers successfully participate in school-wide daily physical activity, and to learn what outcomes they observed with regards to mental health, physical health and academic achievement of the students. In addition, this study investigates the challenges with whole-school DPA as well as successfully implemented strategies. Understanding the strategies that lead to the success of whole-school DPA can assist teachers with better implementation of DPA in their own classrooms.

1.4 Main Research Question

The main question guiding this study is: What are elementary school teachers' perspectives on whole-school DPA and its outcomes for students?
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1.5 Subsidiary Questions

Understanding the outcomes of DPA in the classroom can provide teachers with the value proposition for conducting their own DPA. In addition, it is important to be aware of the multitude of strategies that teachers can use to implement effective DPA. Understanding the essential resources for effective DPA can aid teachers and schools in ensuring they have the proper equipment. Lastly, understanding possible challenges associated with effective DPA implementation can help promote realistic expectations and awareness valuable in overcoming the challenges. It is for these reasons that I would like to investigate the following subsidiary questions:

- What outcomes of DPA do teachers observe regarding the students’ mental and physical health and academic achievement?
- What range of approaches to whole-school DPA have teachers utilized?
- In teachers' experience, what resources are necessary for whole-school implementation of DPA?
- What challenges have teachers observed with whole-school implementation of DPA and how do they overcome these challenges?

1.6 Reflexive Positioning Statement

As a master of teaching student, I strive to discover ways, from both mental and physical health standpoints, to help students succeed academically. As an undergraduate student in psychology, I learned much about mental health and its close relationship with physical activity and academic success. I am interested in both psychology and physical activity and I would like to look further into their mutual relationship.
While many believe that physical activity is only important for physical health, I believe physical activity also influences mental health and academic success. I often participate in physical activity and have done so since childhood. Personally, I experience positive outcomes from physical activity and believe that others can experience similar results. I am interested in creating my own classroom culture that includes and values daily physical activity. I would like to learn strategies that teachers use to effectively implement daily physical activity and benefits they observe in the classroom. As an individual who personally participates in and benefits from physical activity I place a strong value in it; as such, my beliefs may influence this research study by placing a strong value in physical activity.

1.7 Preview of Whole

To respond to the research questions, I conducted semi-structured interviews with two elementary teachers to hear their perspectives on the implementation of whole-school DPA. Chapter 2 reviews the literature in the areas of physical activity and academic success in the classroom as well as the physiological and psychological benefits of daily physical activity. It considers the mental and physical health of Canadian youth and examines the most common concerns that face students. Chapter 2 also describes the effect that physical activity has on students' mental and physical health as well as academic ability. Further, it discusses the implementation of DPA within other jurisdictions in Canada. Lastly it discusses challenges and possible solutions to the implementation of daily physical activity. Next, Chapter 3 expands on the research design. It describes the research approach and procedures. It describes the inclusion criteria as well as the participant biographies. It then describes the strategies for data analysis and covers the ethical review procedures. The chapter concludes with a description of the methodological limitations and strengths. Chapter 4 reports the research findings and discusses
their significance with regards to the current research. The participants' voices are discussed and compared with the literature findings. Lastly it describes potential gaps in the literature. Chapter 5 identifies the implications of the research findings for my own teacher identity and practice and for the educational research community more broadly. The chapter also addresses questions raised by the findings in the research, and points out future topics of research. A list of appendices and references follow to support the paper.
2.0 Introduction

In this chapter I review the literature on mental and physical health among children in Canada. I discuss the health risks that Canadian children face. I consider both the positive and negative impacts that daily physical activity has on the mental and physical health of youth as well as academic performance on elementary school children. The regulations governing physical activity in the classroom of various jurisdictions are discussed. I describe the challenges associated with implementing daily physical activity into the classroom. Strategies are then suggested to help teachers successfully integrate DPA into the classroom and schools.

2.1 Health Among Children in Canada

Many Canadian youth suffer from a variety of physical and mental health issues. These health issues may have short- and/or long-term negative effects. The following discussion describes the most common physical and mental health issues that Canadian youth face.

2.1.1 Mental health

Many Canadian youth suffer from a range of mental health issues. Per the Canadian Mental Health Association (2014), as many as 1 in 7 (15%) Canadians will suffer from a mental health issue during his/her youth. The most common mental health issues that Canadian youth face are low self-esteem, depression and stress/anxiety. This section describes these mental health issues, associated risk factors, and how they affect children in Canadian elementary school systems.
Many Canadian youth suffer from low self-esteem. Self-esteem is defined as “the degree to which individuals feel positively or negatively about themselves” (Steinberg, 2011, p.248). Having a low self-esteem can lead to a variety of other concerns for young people including problems with self-image and a negative mood. Until young-adulthood, youth may have a difficult time consolidating feelings about themselves. Youth, in their early adolescent years, from 12 to 14, are more likely to have a fluctuating self-image compared to adolescents who are 15 years and older and to preadolescents (8 to 11-year-old). Early adolescents also experience lower self-esteem, are more self-conscious and have a more unstable self-image than do their younger counterparts. Females, compared to males of the same age bracket have demonstrated lower self-esteem across all ages throughout adolescence (8-15 years), as well as across all tested categories, including social, scholastic, appearance and athletic self-esteem (Steinberg, 2011).

Many factors contribute to a person's self-esteem so it is often difficult to measure. It is therefore suggested that self-esteem be measured globally (which may be a good indicator of general psychological well-being) as well as through several distinct dimensions, such as academics, athletics, appearance, social relationships and moral conduct. Using these measures allows the researcher to determine specific areas of strengths and weaknesses (Steinberg, 2011). Participation in physical activity can influence self-esteem. Section 2.3.1 of this study describes the connection between physical activity and self-esteem.
Depression

Depression is another common mental health issue that many Canadian youth face. Depression is defined as “a psychological disturbance characterized by low self-esteem, decreased motivation, sadness and difficulty in finding pleasure in formerly pleasurable activities” (Steinberg, 2011, p. 426). In its mild form, depression is the most common psychological disturbance among youth. Many of the adolescents, however, do not experience depression by its clinical definition. The DSM-IV states that for an individual to be clinically depressed, s/he must experience “1. [a] depressed or irritable mood for most of the day, for more days than not, for at least one year. 2. the presence, while depressed, of at least two of the following: a. poor appetite or overeating, b. insomnia or hyperinsomnia, c. low energy or fatigue, d. low self-esteem, e. poor concentration or difficulty making decisions, f. feelings of hopelessness. 3. The symptoms cause clinically significant distress or impairment in social, school or other important areas of functioning.” The DSM-IV explains that, while youth may experience some symptoms of depression (namely a depressed mood), often the symptoms are not defined as clinical.

According to one large-scale survey, almost one-third of all youth feel so sad and hopeless that they stop engaging in their usual activities (Centres for Disease Control and Prevention, 2008). Other studies suggest that over 25% of youth feel symptoms of depression on a regular basis (Avenevoli & Steinberg, 2001). Although approximately 3% of adolescents experience depressive symptoms that meet the DSM-IV criteria, depression symptoms among youth are three times more common than in children. In addition, a gender gap has been found; until the age of 13 depressed mood is more common among boys, however after puberty this phenomenon reverses. Girls are twice as likely to experience symptoms of depression than boys
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(Wade, Cairney, & Pevalin, 2002). Symptoms of depression are extremely common among youth in the Canadian education system. Reduced symptoms of depression are linked with participation in physical activity. Section 2.3.1 of this study will further explain the impact that participation in physical activity has on depression in children and youth.

Stress/Anxiety

Anxiety is defined as prolonged sense of fear, tense feelings and difficulty managing daily tasks and the stress associated with it (Centre for Addiction and Mental Health, 2012). Nearly half of all adolescents’ report difficulty in coping with stressful situations both at home and at school (Steinberg, 2011). Youth experience many stressors including major life stressors (i.e., parental divorce, changing schools, and/or an illness or death of a loved one), chronically stressful conditions (for example, poverty, a disabling illness, or constant family conflict), and day-to-day hassles (for example, school exams, fights with friends and family arguments).

Stress can affect individuals in different ways. Stress may cause anxiety, depression, headaches and even compromised immune system functioning (Birmaher et al., 1994). Stress can also produce physical symptoms including tense muscles, neck or back pain, dry mouth, clenched jaw, pale, sweaty and clammy skin, tightness in the chest, and hyperventilation (Harvard Medical School, 2011). Others may experience conduct problems or drug/alcohol abuse (Steinberg, 2011). Over 70% of high school seniors have tried alcohol, over 40% have tried cigarettes, and marijuana, and nearly 15% have tried narcotics other than heroin. It is difficult to determine whether stress is the cause of the delinquent behaviour, however, lowering the stress levels of Canadian youth may reduce drug use and conduct issues.
The diathesis-stress model is a perspective which demonstrates that problems people experience is a result of an interaction between a preexisting condition (the diathesis) and exposure to a stressful event (Steinberg, 2011). This model would suggest that youth experience depression when they are predisposed toward internalizing problems and are also exposed to a stressor. This model suggests that reducing stressors can help reduce stress levels. Others believe that mental health issues are exclusively genetic, since strong genetic components have been found (Steinberg, 2011).

As noted above, many mental health concerns face Canadian youth, and many youth experience mental health issues during their childhood and adolescence. Children/youth with untreated mental health issues are at a higher risk of experiencing either the same or different mental health issues as an adult (Lahey, 2015). For example, conduct disorder in childhood often predicts antisocial personality disorder in adulthood (Lahey, 2015). As well, students who experience low self-esteem, symptoms of depression, and/or anxiety/stress are at a higher risk of participating in unhealthy behaviour including substance abuse, delinquent behaviour and suicide attempts. Treating and reducing the symptoms of existing mental health issues in children may reduce the risk of mental health concerns for adults (Lahey, 2015). It may also reduce the participation in unhealthy behavior in both youth and adults.

2.1.2 Physical health

The main physical health concern that Canadian youth face is obesity (Statistics Canada, 2011). Over 31% of Canadian youth between the ages of 5 and 17 are defined as overweight or obese according to their Body Mass Index (BMI), which estimates adiposity based on weight relative to height (Statistics Canada, 2011). A BMI between 25 and 29 is defined as overweight
and a BMI between 30 and 39 is obese. Based on research conducted by the Government of Ontario (2004), the number of 7- to 13-year old children who are obese has tripled from the year 1981 to 1996. Boys between the ages of 5 and 11 show the highest tendency to be above the normal body weight (Statistics Canada, 2011).

![Chart 1. Prevalence of Measured Obesity Among Children 2 to 11 Years, and Youth 12 to 17 Years, Canada, 2004 (Statistics Canada, 2012).](chart1.png)

Chart 1 demonstrates that obesity becomes more prevalent as Canadian children age. Statistics Canada (2011) determined that the rate of youth who are overweight and obese has declined slightly since 2004; however, obesity among Canadian youth is still a serious health concern.

Children who are overweight and obese may experience premature heart disease and stroke as adults (Heart and Stroke Foundation, 2011). Of the estimated 31% of Canadian youth who are overweight, 4 out of 5 will grow up to be overweight adults (Heart and Stroke Foundation, 2011). Overweight adults have a higher risk of developing heart disease and stroke – the leading causes of death among Canadians (Heart and Stroke Foundation, 2011). Overweight adults are at an increased risk for type 2 diabetes, hypertension and some cancers (Government of Ontario, 2004).
Despite the importance of physical activity on health, the amount of time youth participate in moderate to vigorous physical activity has dramatically declined (Nader, Bradley, Hourts, McRicjoe, & O'Brien, 2008). At 9-years-old, the average weekly amount of physically active time (outside of the classroom) is 185 minutes for girls and 190 minutes for boys. By the age of 15, the average amount of time spent being physically active drops below 60 minutes for boys and 55 minutes for girls (Nader et al., 2008). It is recommended that children participate in at least 100 minutes of physical activity each day to maintain a healthy body (Heart and Stroke Foundation, 2011). Older youth are not getting enough exercise.

A strong connection can be seen between the physical and mental health of children, specifically in terms of self-esteem and body dissatisfaction (Steinberg, 2011). A high proportion of youth are not happy with their physical appearance. Over two-thirds of normal weight girls perceived themselves to be overweight. Of those students, over half believed that they would be happier, more successful and more popular if they lost weight (Paxton et al., 1991). Participation in physical activity could have significant impact on body satisfaction.

2.2 DPA Impact on Students

Daily physical activity may affect the mental health, physical health and academic performance of participating students. The following describes research results regarding the implementation of daily physical activity for children.
2.2.1 Mental health:

Stress/Anxiety:

Participation in daily physical activity can reduce stress and anxiety among students (DeMarco & Sidney, 1990). Individuals who experience anxiety and who exercise daily experience similar relaxing or calming effects as meditation (Paluska & Schwenk, 2000). Physical activity is an effective strategy to reduce fatigue, increase alertness and enhance overall cognitive functioning (Anxiety and Depression Association of America, 2016). Stress not only effects the mind, but the body as well. Therefore, if one helps reduce tension in the body, it can also help relieve tension in the mind. Exercise and other physical activity produce endorphins, which are chemicals that act in the brain as natural painkillers. The production of endorphins improves the ability to sleep, which in turn reduces stress (Anxiety and Depression Association of America, 2016). Exercise is also able to lower hormones in the body, like adrenaline and cortisol, that cause stress (Harvard Medical School, 2011).

In addition to endorphins and other hormones, leisure time can also help lower stress. People, especially students, need leisure time; a time where they can spend on their own, or a time when they can play with friends. In addition, exercise can distract the students from their worries and problems, assisting to relax their minds, lower their stress and think creatively (Harvard Medical School, 2011). Physical activity appears to be a good option to help alleviate stress.
Self-Esteem:

Research has found that participation in daily physical activity can increase self-esteem in students (Joseph, et al., 2014; Bailey, 2014) and increase perceived physical competence (DeMarco & Sidney, 1990). A positive self-esteem is important for students to manage current mental health concerns and prevent the onset of more serious mental health issues (DeMarco & Sidney, 1990).

As people become more physically fit, their bodies will lose excess weight, their waistline may become thinner and their strength and stamina will improve (Harvard Medical School, 2011). Low self-esteem and body dissatisfaction is highly common among youth. Participation in physical activity is effective at raising the self-esteem of students and increasing satisfaction of one's appearance (Harvard Medical School, 2011). Both adults and youth experience self-esteem benefits from physical activity (American Psychological Association, 2016). Fifty-three percent of youth feel good about themselves (and less stressed) during and after participation in exercise. While physical fitness promotes an increase in self-esteem, many people, including 29% of youth, are not achieving their physical activity goals (American Psychological Association, 2016).

Depression:

Although participation in daily physical activity has not been shown to prevent the onset of depression, it has been shown to significantly reduce symptoms in those already experiencing depression (Paluska & Schwenk, 2000). Many students experience depression symptoms regularly. By promoting daily physical activity, teachers can reduce the negative symptoms in
students at school. Physical activity is linked to emotive well-being, spirituality and positive future expectations which can foster a more positive outlook for students (Trudeau & Shephard, 2010). Overexertion in physical activity and overtraining, however, may generate psychological symptoms that mimic depression (Paluska & Schwenk, 2000). It is therefore important to ensure that students exercise an appropriate amount (Paluska & Schwenk, 2000). The research demonstrates that, within reason, participation in physical activity can help students with depressive symptoms have a more positive perspective and can promote emotional well-being.

The most common form of mental health issue among youth is mild depression (Steinberg, 2011). According to Miller (2009), regular physical activity can reduce the symptoms of mild depression. Exercise stimulates the neurotransmitter norepinephrine which directly improves one's mood. Both adults and adolescents experience positive effects from participation in physical activity, however the American Psychological Association (2016) suggests that youth benefit more than adults.

A study conducted by Dopp, Mooney, Armitage and King (2012) demonstrates that aerobic exercise can reduce depressive symptoms among youth. The study states that medical professionals often are hesitant to prescribe anti-depressants for children and youth. Exercise can often be an effective alternative for children and youth (Dopp, et al., 2012). This study demonstrates that physical activity is as effective as anti-depressants in helping youth overcome depression. Since many youth experience symptoms of depression, exercise can be an effective strategy in boosting the students' well-being.
2.2.2 Physical health

Adolescence is a time of decreased participation in aerobic activity (Dopp, et.al., 2012). However, participation in physical activity has many benefits, especially for young people including secondary preventions of many chronic diseases including cardiovascular disease, some forms of cancer, and diabetes (Warburton, Nicol, & Bredin, 2006). A direct association has been found between fitness and health, demonstrating that the more active a person is the more health benefits that person will experience (Warburton, Nicol, & Bredin, 2006).

Students who participated in 40- to 60-minutes of physical activity daily over the course of 14 weeks showed significant decreases in body fat compared with students who did not participate in the fitness program (Dwyer, Coonan, Leitch, & Baghurst, 1983). Further, the study found that after participation in the fitness program for 2 years, students had lower blood pressure yielding statistical significance for diastolic pressure in boys (Dwyer et al., 1983). This research demonstrates that participating in short amounts of physical activity each day can improve health among youth. In addition, the study conducted by Dopp, et.al., (2012) demonstrates that, of the youth who participated in daily physical activity, the number of participants in the healthy weight category doubled. The experiment by Dopp, et.al. (2012) demonstrated how physical activity each day can promote a healthy weight among the participating youth. Participation in consistent physical activity daily can contribute to increased health, in variety of ways, among participants.
2.2.3 Academic performance

Participation in physical activity has been found to boost academic performance (Atkinson, 2015; Trudeau & Shephard, 2010) in terms of memory, observation, problem-solving and decision-making, as well as significant improvements in attitudes, discipline, behaviours and creativity (Keays & Allison, 1995). Consistent participation in physical activity yields short-term benefits of increased concentration and long-term benefits of enhanced cognitive abilities (Taras, 2005). Participation in physical activity during the school day can promote learning and concentration by increasing arousal and reducing boredom (Coe, Pivarnik, Womack, & Reeves, 2006). A study looking at the relationship between physical activity and academic success demonstrates that students who participate in physical activity frequently had higher grade point averages than students who rarely participated in physical activity (Field, Miguel, & Sanders, 2001). Studies reveal that students who participate in physical activity during school hours demonstrated academic success despite having less academic instructional time than those who did not miss instructional time (Trudeau & Shephard, 2010). A study conducted by Coe et al., (2006) only saw significant academic benefits of increased grades when students participated in vigorous physical activity; no significant results were found when students participated in moderate or no physical activity. Low level of activity may not provide sufficient stimulation to influence academic achievement, which is why it is important for students to be receiving moderate to vigorous physical activity each day (Coe et al., 2006). Students can find academic success in the classroom from participation in vigorous physical activity each day as physical activity is linked to a boost in many higher order thinking skills.
As well, participation in physical activities can reduce disruptive behaviour in students (Trudeau & Shephard, 2010). Students who behave well in the classroom also demonstrate higher academic success than those who do not (Trudeau & Shephard, 2010). Students demonstrated higher levels of concentration after participation in physical activity; students received higher scores on the Woodcock-Johnson Tests of Concentration if they had participated in physical activity before the test (Caterino, 1989). DeMarco and Sidney (1990) found that students who did not participate in physical activity daily were at a higher risk of dropping out of school and taking part in delinquent behaviour. Physical activity can promote academic success among students by reducing disruptive behaviour and increasing concentration.

2.3 DPA Approach in Various Jurisdictions

As a result of the multiple perceived benefits of DPA, all jurisdictions in Canada have implemented policies regarding the participation in teacher directed physical activity at school. Most Canadian provinces and territories allocate 150 minutes of physical activity each week (average of 30 minutes daily). The amount of time ranges from 90 minutes every 6 days to 198 minutes every 6 days. It is estimated that schools in many provinces and territories dedicate far less than the allocated time (PHE Canada, 2015).

2.3.1 Ontario

As stated by Policy/Program Memorandum No.138 (implemented in 2005) entitled Daily Physical Activity in Elementary Schools, students in Grades 1-8 must participate in a minimum of 20 minutes of physical activity each day aside from activities during recess (Ontario Ministry of Education, 2013). The physical activity can range from vigorous to moderate exercises.
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(Ontario, 2009). The DPA should be implemented during instructional time throughout the school day (Ontario, 2013). It is estimated that actual instruction across the province ranges as low as 40 minutes of physical activity each week (average of 8 minutes per day) to 200 minutes each week (average of 40 minutes per day) (PHE Canada, 2015).

2.3.2 Other provinces/territories

The table below demonstrates the time allocated to physical activity and the estimated actual amount of time spent in jurisdictions other than Ontario.
Table 1: Physical Activity in Jurisdictions Other Than Ontario

<table>
<thead>
<tr>
<th>Province/Territory</th>
<th>Time Allocated to Physical Activity</th>
<th>Estimated Actual Amount of Physical Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>British Colombia and Yukon</td>
<td>150 minutes per week (min/wk) for grade k-8</td>
<td>90 min/wk</td>
</tr>
<tr>
<td>Alberta, Northwest Territory and Nunavut</td>
<td>150 min/wk for grade k-8</td>
<td>120 min/wk</td>
</tr>
<tr>
<td>Saskatchewan</td>
<td>150 min/wk for grade 1-9</td>
<td>N/A</td>
</tr>
<tr>
<td>Manitoba</td>
<td>99 min/6 days for JK/SK</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>198 min/6 days for grade 1-6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>178 min/6 days for grade 7-8</td>
<td></td>
</tr>
<tr>
<td>Quebec</td>
<td>120 min/wk</td>
<td>40-60 min/wk</td>
</tr>
<tr>
<td>New Brunswick</td>
<td>100 min/wk for grade k-5,</td>
<td>100 min/wk for grade k-5,</td>
</tr>
<tr>
<td></td>
<td>150 min/wk for grade 6-8</td>
<td>150 min/wk for grade 6-8</td>
</tr>
<tr>
<td>Nova Scotia</td>
<td>100 min/wk for grade k-2,</td>
<td>Varies Across Province</td>
</tr>
<tr>
<td></td>
<td>150 min/wk for grade 3-8</td>
<td></td>
</tr>
<tr>
<td>Prince Edward Island</td>
<td>90 min/6 days for grade 1-8</td>
<td>Varies Across Province</td>
</tr>
<tr>
<td>Newfoundland and Labrador</td>
<td>6% of instructional time</td>
<td>Below Department Requirements</td>
</tr>
</tbody>
</table>

(PHE Canada, 2015)

Table 1 suggests that most jurisdictions in Canada do not reach the requirement for physical activity for the province. It is extremely important that youth participate in physical
activity each day, however teachers are faced with many challenges to integrate physical activity into the classroom and curriculum, and thus, many students in Canadian schools are not participating in enough physical activity and are not gaining the health (American Psychological Association, 2016) and academic (Caterino, 1989) benefits of physical activity.

2.4 Challenges of Integration

Despite the Ontario government requirement of 20 minutes of daily physical activity among elementary school children, only 55% of schools are properly implementing it (Brown & Elliott, 2015). Several reasons possibly explain why DPA is not properly being integrated in the classroom. To begin, many schools give less priority to daily physical activity than to other mandated subjects, as it is monitored less (Brown & Elliott, 2015). There are no specific curriculum expectations for DPA except for the implementation of it, and thus, many principals do not give equal value to DPA as they do for other aspects of the curriculum (Brown & Elliott, 2015).

Furthermore, many teachers are not trained in physical education and do not feel comfortable or confident in their ability to lead DPA activities (Brown & Elliott, 2015). In one study considering creating better DPA programs stated that all the teacher participants felt uncomfortable leading DPA activities for the students (Decorby, Halas, Dixon, Wintrup, & Janzen, 2005). The teachers explained that their lack of physical education knowledge limited them in their ability to teach physical education. Many teachers struggle to come up with and plan sports games and other athletic activities (Decorby, et.al., 2005).
In addition, it is difficult for teachers to implement DPA into their classroom due to lack of space, supplies and/or support. The Ontario Ministry of Education (2005), in the publication *Daily Physical Activity in Schools*, suggests using multipurpose rooms, gymnasiums and the outdoors for DPA. Many schools, however, do not have a multipurpose room to use for DPA activities and many multipurpose rooms have low ceilings, materials stored in the room or it is a high traffic location (Ontario, 2005). Teachers may find logistical challenges to find an available time to use the gymnasium between health classes and assemblies (Decorby, et.al., 2005). It can be challenging for teachers to rely on leading DPA outdoors because of variable weather conditions, difficulty of getting student attention in a large outdoor space, difficulty of accounting for all students in a large, open outdoor space and the higher likelihood of student injury (Ontario, 2005).

Another challenge of integrating daily physical activity into the classroom is accommodating each student in the class. As stated in the government of Ontario laws on daily physical activity (2005), teachers are required to accommodate the lesson to each student in the class with special needs. Teachers, who have little to no background in this subject area, may find DPA challenging to implement (Ontario, 2005). Teachers also find it difficult to create one lesson that can be adapted to the needs of all the students. Lastly, teachers may not have access to resources they need to properly accommodate all students. Teachers experience many struggles associated with the implementation of DPA and consequently many do not properly implement physical activity in the classroom, if at all.
2.5 Strategies for Integration

Multiple strategies are suggested to aid teachers in DPA implementation. To begin, finding an appropriate location for DPA can be an effective strategy for teachers. Daily physical activity can take place anywhere on the school property including the classroom, gymnasium, multipurpose room and field/playground (Ontario, 2005). If available, the teacher may choose the ideal location to facilitate the physical activity for the day. Many engaging activities use large rooms or fields, however multiple equally engaging activities that can be conducted in the classroom (Ontario, 2015).

Additionally, teachers can utilize students in the classroom to lead the DPA activities for the other students or have older students lead DPA activities for the younger classes (Barr-Anderson, et al., 2011). Older students as leaders can be motivating for both older students and younger students at school.

Furthermore, there are many practical resources available for teachers such as DPA kits (Ontario Physical and Health Education Association, 2016). The kits can be purchased either by the school or teacher that contain tools that can be used for DPA, for example, activity cards, dancing DVDs and a Movin’ Music CD (Ontario Physical and Health Education Association, 2016.). These DPA kit activities are pre-made and teachers do not need to prepare any DPA activities in advance.

Many fun and creative DPA activities have been provided by the Ontario government, in the publication entitled Ontario Ministry of Education (2005), to provide simple and engaging
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activities for the class and for the school. The following describes some example of simple activities that can be done in the classroom or large space with little to no equipment:

- Health Hustle: With the help of the teacher, students in each class in the school come up with a fitness / aerobic routine for their class. Students do their routine in their own classroom, in the hallway, or in the gymnasium at the same time. Music can be played over the public-address system. The routine can be led by the classroom teacher or a student.

- “Jump Rope: All students in the class, school or in a division (e.g., junior) go outdoors and skip rope. Students in each class are divided into groups and participate in an activity that is suitable for their grade or skill level. The activity can be led by a teacher or a student.

- Fitness Circuit: A set of circuit cards is put up on the wall of a large area or classroom, and is left up for the day or for a week. Class(es) in the group or division rotate through the circuit. The activity can be led by the classroom teacher or a student.

- Walk Across Canada: The aim of this activity is to see how long it would take to walk across Canada. The distance across Canada is determined in number of steps or in hours of brisk walking. Students track the number of steps taken (with a pedometer) or the amount of time spent in brisk walking. The distance travelled by the students as a class is recorded each day. The total distance travelled by the students in the class is determined each week or month, and added to the distance travelled by the other classes in the school” (Ontario, 2005 P. 31).
It is important to choose activities appropriate for the location to reduce the likelihood of property damage, injury and/or distraction (Ontario, 2005). Creating communication strategies and guidelines for students in the class as well as other students and teachers help ensure efficient and safe use of available space (Ontario, 2005).

An additional strategy that can be employed by teachers is the use of technology. While the Ontario Ministry of Education (2005) document is an example of an online technological resource, there are additional novel technologies available. Hurling, et. al., (2007) discuss how downloadable applications created for physical activity can be motivating for consumers. These resources can be used by teachers not only to motivate and excite the students for DPA, but also provide them with effective physical activity. Another article suggests that since youth spend significant amount of time consuming technology, using DVDs and/or computers for the purpose of DPA can promote the participation in physical activity (Barr-Anderson, et al., 2011). The students may be more include to be physically active if it involves technology. Additionally, making government research more readily available to teachers can assist teachers in effectively implementing DPA. Limited research was found discussing the results of DPA implementation for students. Further research should be conducted regarding the effects of DPA for students, and further DPA resources should be made available to teachers.

2.6 Conclusion

In the literature review I found that many connections between daily physical activity of children / youth and its impact on mental / physical health and academic success. I also found challenges and strategies related to successful integration and teacher implementation of daily physical activity into the classroom.
Canadian youth suffer from a variety of mental health issues including low self-esteem, low self-efficacy, high stress levels and anxiety. Participation in daily physical activity can significantly increase self-esteem and self-efficacy and reduce stress and anxiety. Over 31% of Canadian youth are overweight and therefore are at a higher risk of developing heart disease, stroke, cancer, and other medical conditions. Participation in daily physical activity can help maintain a healthy body weight and reduce the risk of experiencing medical issues as an adult. Lastly, daily physical activity can promote academic success by increasing concentration, ability to focus, enhancing cognitive abilities and reducing disruptive behaviour.

Despite all the positive benefits the research has elicited from the implementation of daily physical activity, it is not often being taught in Ontario schools. Teachers face challenges such as a lack of resources, difficulty accommodating the lesson to all students, lack of confidence and skill level when implementing daily physical activity, which may be a reason for the low execution rates. Some classroom integration techniques were suggested to help teachers effectively conduct physical activity classes with their students each day. These techniques demonstrated simple, low-risk, low-equipment activities that can be conducted in the classroom. By noting the issues Canadian youth face, the benefits of daily physical activity for youth, and strategies to effectively implement physical activity each day, it is my hope that more teachers will feel confident in teaching, understanding, and seeing the positive effect of daily physical activity in the classroom.

Implementing whole-school DPA will help ensure that all the students and teachers at the school are participating in physical activity each day. It can often be a challenge for a single teacher, who may not have a physical education background, to come up with interesting,
exciting and engaging DPA activities on his/her own; school-wide DPA allows school staff members to work together to create DPA activities. As well, my research has come to suggest that while participation in physical activity has many positive benefits for students, it also benefits adults, including school staff members. Participation in DPA will not only benefit the students, but the staff members as well. Whole-school DPA, can therefore be an effective strategy for engaging DPA activities, which can benefit both students and teachers.
3.0 Introduction

In this chapter I explain the research methodology, identifying the various methodological decisions made, and my rationale for these choices, given the research purpose and questions. The research approach and procedure are explained, followed by a description of the main instrument of data collection, namely semi-structured interviews. The participants of the study are identified, sampling criteria listed, sampling procedures described, and some information on the participants given. I next describe how I have analyzed the data, then review relevant ethical issues that have been considered and addressed. Methodological limitations of the study are discussed while also highlighting and acknowledging the strengths.

3.1 Research Approach and Procedures

The study will be conducted using a qualitative research approach, including a review of the existing literature pertinent to the research questions and purpose of the study, as well as semi-structured, face-to-face interviews with two teachers. For the purposes of this study, qualitative research will be used since it will help to provide insights about DPA based on the comments of the interviewed teachers. Quantitative research can be defined as research that explains phenomena using numerical data that can be analyzed mathematically. In contrast, qualitative research can be defined as research that produces findings not arrived at by statistical procedures or other means of quantification (Yilmaz, 2013). Another definition of qualitative research is “the collection of extensive data on many variables over an extended period of time, in a naturalistic setting, to gain insights not possible using other types of research” (Gay &
Historically, qualitative research has not been given due credit for its insightful ability (Carr, 1994). It was difficult for researchers to receive funding for qualitative studies until the mid-1980 (Carr, 1994). Therefore, there had traditionally been a lack of publications covering qualitative research (Carr, 1994). Neither qualitative nor quantitative research is superior, they simply each serve a different purpose (Carr 1994).

Qualitative research has much value since it can provide “rich insight into human behaviour” (Guba & Lincoln, 1998, p. 198). Using qualitative research is naturalistic and ecologically valid. In addition, qualitative research provides context and meaning to the information. Qualitative research can investigate specific issues in greater depth, considering the context of the behavior and/topic. Ultimately, the researcher can have a larger perspective. It is also argued that the findings from qualitative research cannot be generalized, however, the information gained from quantitative research can be transferable (Lipscomb, 2012). This research paper considers strategies and challenges for implementing daily physical activity. The goal is to gain rich insight from teachers who implement DPA for the whole-school. Qualitative research allows the interviewees to give in-depth responses to the questions and elaborate on their experiences without having to give fixed answers as required by quantitative research. The researcher also has the flexibility to dig further into certain aspects of the interviewee's experiences that are pertinent to the research purpose and question.

3.2 Instruments of Data Collection

Data collection is an essential component of qualitative research and in turn, this research study. The primary instrument for data collection used in this study is the semi-structured interview protocol (see Appendix B). There are different types of interviews including structured
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Interviews, semi-structured interviews, unstructured interviews and non-directive interviews. Interviews are an essential way for researchers to collect data. Gray (2004) states the following reasons why interviews are beneficial, “1. There is a need to attain highly personalized data. 2. There are opportunities required for probing. 3. A good return rate is important. 4 Respondents can speak or can be assisted by a translator if they are not fluent in the native language of the country, or if they have difficulties with written language” (p. 214). It is also important that the interviewer is clear about the expectations of the interview including why they are asking the questions, the purpose of the interview, the length of the interview, and the set time/place to conduct the interview (Gillham, 2000). The components associated with semi-structured interviews are important to properly investigate the research question since it allows the interviewees the freedom to express themselves in the predetermined confounds set by the interviewer. Furthermore, the interviews yield reliable, comparable qualitative data.

Semi-structured interviews will be used for the purpose of this research. The interviewer does not conduct the research to test a specific hypothesis (David & Sutton, 2004), but rather identifies a list of key themes, issues, and questions to be covered (Kajornboon, 2004). The order and type of questions can change in a semi-structured format depending on the direction of the interview. The interview is guided by the questions and key themes; however, questions can be changed, elaborated, and additional questions can be included depending on the path of the interview. Semi-structured interviews give the interviewer the freedom to ask probing questions that were not initially identified (Kajornboon, 2004). In semi-structured interview, the interviewer does not have to adhere to a detailed interview guide that is required of structured interviews, but are more confined than in unstructured and non-directive interviews. Using the semi-structured interview protocol, the researcher can dig deeper into a certain aspect of the
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discussion. Using semi-structured interviews, the researcher is also able to explain or rephrase questions that are unclear, and the interview process can parallel a conversation. However, the interviewer is unable to ask promoting questions. This may result in a lack of information. Also, inexperienced interviewers may not probe into a situation that may be valuable to the research (Kajornboon, 2004).

3.3 Participants

Here I review the sampling criteria established for participant recruitment, and I review a range of possible avenues for teacher recruitment. Additionally, each of the participants will be introduced. Their personal connection with physical activity as well as their experience with DPA in the classroom will be described.

3.3.1 Sampling criteria

The following criteria will be applied to teacher participants in the study:

1. Teachers will have taught in schools that implement whole-school DPA for a period of at least 2 years
2. Teachers will have a demonstrated commitment to and/or leadership in DPA as part of their own professional practice
3. Teachers must have experience teaching for a minimum of 5 years
4. A minimum of 1 participant of each gender (identifies as male or female)

For the purpose of this study, it is important that the teachers have been teaching in a school that has implemented whole-school DPA. This way the teachers can discuss the impact that DPA
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has, not only on their own classroom, but on the school as a whole, and on both students and faculty members. It is important that the teachers value DPA and have conducted class-wide DPA because it demonstrates leadership in the field as well as commitment to the health and well-being of the students. Lastly, the study requires one participant of each gender since there may be gender differences which I would like to explore.

3.3.2 Sampling procedures/recruitment

It is important to manage the recruitment process since it can control biases and can help ensure representative samples (Arcury & Quandt, 1999). Properly recruiting individuals for a study can promote effective representation of the group of study (Arcury & Quandt, 1999). It is important for effective recruitment to have proper sampling criteria that reflect the goals of the researcher (Arcury & Quandt, 1999). In addition, it is crucial that the recruitment process abides by ethical guidelines. Three important parameters in creating an ethical recruitment process and study are respect for persons, beneficence and justice (Steinke, 2004). These values ensure that people are autonomous in their decisions to participate in the study; the participants are protected from harm by maximizing potential benefits and minimizing potential harm, and ensure that all people are treated fairly and equitably. Informed consent is vital as it is an application of respect for persons, beneficence and justice (Steinke, 2004). It allows the participants to understand the purpose of the study prior to participating and autonomously choose to partake in the study. It is important that the consent form is clear and simple rather than confusing and challenging to understand to prevent any misconceptions, or potential harm (Steinke, 2004).

I will ensure proper recruitment by contacting teachers individually and through teacher organizations and ensuring they are provided with an overview of my research study. I will
provide the participant criteria and ask that these individuals/organizations distribute my information to teachers they believe may fulfill the criteria. I will follow up with the individuals who contacted me and ensure that they fulfill the sampling criteria to the standards of the study. I will provide my contact information rather than ask these individuals/organizations to provide me with the names and contact information of people they think would be suitable. This will help ensure that teachers are volunteering to participate rather than feeling pressure or obligation to participate. I will ensure that the participants have a strong understanding of the study though a clear and simple consent form (see Appendix A). The consent form will demonstrate that it is the choice of the participant to partake in the study, they have the right to leave at any point and that they will be treated equitably. I will select participants who have a wide breath of knowledge on the topic of whole-school DPA and who are conveniently located.

3.3.3 Participant biographies

The participants’ names have been changed to protect the identities of the teachers. The following are the biographies of the teachers who were interviewed for this study.

Lucy

The first participant, Lucy, has been a teacher for 18 years. She has worked as an ESL resource teacher and Grade 1,2, and 3 teacher. She currently works as an ESL teacher in a self-contained class. The school she currently works at no longer implements whole-school DPA, however, in previous years it was successfully implemented with her support and participation. Her school utilized the older students to lead the structured DPA programs to the younger students while the activity was playing over the public address system for the entire school. As a
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child, Lucy participated in dance classes and a Canadian Basic Fitness test. She regularly goes for outdoors walks when the weather permits and otherwise exercises with a treadmill. Additionally, she participates in a weekly exercise class. Lucy provided insight into successful whole-school DPA strategies that were implemented at her school in the past.

Stan

The second participant, Stan, has been teaching for 8 years. He currently works as a Grade 3 homeroom teacher. Additionally, he has taught kindergarten, grade 4, art, and physical education. His current school has a population of approximately 250 students ranging from kindergarten to Grade 5. Although his current school does not participate in whole-school DPA, 2 of his previous schools successfully implemented whole-school DPA. At his first school, whole-school DPA was implemented using student leaders, and at the other school the gym teacher developed the program that each homeroom teacher individually led. He has been ensuring his students receive DPA for all 8 years of his teaching career. Stan became more committed to DPA when he was inspired by the whole-school DPA program created and implemented by physical education teacher at a previous school. As a child, Stan took part in a variety of weekend and after-school sports programs, such as hockey and soccer. As an adult, he ensures that he is physically active as well; he runs and swims several times each week. Stan provided insight into two effective strategies for whole-school DPA.

3.4 Data Analysis

Data analysis was conducted to gain tangible information from the data collected in a qualitative study. There were several objectives researchers were looking for in the process of
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data analysis including, “contextual information – identifying the form and nature of what exists, diagnostic – examining the reasons or causes for what exists, evaluative – appraising the effectiveness of what exists, and strategic – identifying new theories, policies or plans of action” (Huberman & Miles, 2002, p. 307). Since the data was collected verbally, using an audio-recording device, the initial step of analyzing the data was to transcribe the information into text form. This process required judgments and inferences to be made about the raw data (Huberman & Miles, 2002). The next step was to map and interpret the information. In this process, I pieced together themes and concepts that were found in the text. The information was categorized and associations were found between them (Huberman & Miles, 2002). During my analysis, I used this procedure, whereby I transcribed the interview transcript into text form. I then analyzed the data and related it back to my research purpose and questions. Later I categorized the information into themes and topics finding similarities and differences between them, while at the same time recognizing null data.

3.5 Ethical Review Procedures

The recruitment, treatment and information given to the participants was guided by ethical standards. All participants had the right to respect for persons, beneficence and justice (Steinke, 2004). From the initial recruitment, the subjects understood that they have the autonomy to decide whether to participate or not. They also had the choice to discontinue their participation at any point. The volunteers were informed of the intentions of the study as well as any potential risks involved in participating (Steinke, 2004). As stated in the consent letter (see Appendix A), there were no known risks involved with participation in this study. As well, the participants were treated fairly and equitably during the duration of the study.
This study abided by these principals by ensuring that the participants read and understood the consent letter prior to the interview so that they understand the risks and their rights during the interview process (See Appendix A). No known risks were involved in the participation of the study. The participants were reassured that they had the right to refrain from answering any question that they did not feel comfortable with, as well the right to withdraw from participation at any point. The participants had the opportunity to review the transcripts and clarify or retract any statements before the data was analyzed. All the data is stored on my password protected computer and will be destroyed after 5 years. Participants were asked to sign a consent letter agreeing to be interviewed and recorded. This consent letter provided an overview of the study, addressed ethical implications, and specified expectations of participation (one 45-60-minute semi-structured interview). I also insured confidentiality of the participants by assigning a pseudonym in place of their names and removing any other identifying information.

3.6 Methodological Limitations and Strengths

The semi-structured interview technique for qualitative research has strengths and limitations associated with it. There are several limitations associated with qualitative research. One limitation of conducting interviews is that it may be possible that the presence or the intonation of the researcher can influence the answers of the participants (Carr 1994). As well, the relationship between the researcher and the participant can distort the results and the findings. It is often important for research to have numerical data to identify key aspects of the information, however, qualitative research does not yield numerical data (Carr 1994). It is argued that quantitative research is more reliable because it is possible to control more of the variables.
Lastly, qualitative research is unstandardized and relies on insight of the researcher to inform the meaning of the data (Carr 1994).

The strengths associated with qualitative research are that it provides much evidence and information into the relationship between different variables (Carr 1994). It can provide insight on future outcomes of a similar situation. Soft data, as opposed to numerical data, can provide rich and intricate results and can point out and focus on specific details (Carr 1994). It can be easier to see themes and make connections between the themes using the qualitative method. (Carr 1994).

Despite having limitations, for the purpose of the research purpose and question, qualitative research, in the form of semi-structured interviews, will be a strong and effective way to discover important information on the topic of DPA. While the findings are not generalizable to the broader population, they are capable of nevertheless informing theory and practice in this area. This research can also add focus on accessing lived experiences of teachers and the meaning they make of their experiences.

3.7 Conclusion

In this chapter I explained the research methodology. The discussion of the research approach and procedure allowed for a discovery in the meaning and significance of qualitative research, and highlighted some of the major differences between qualitative and quantitative research. Interviews were the primary instrument to collect the qualitative data. I explored the various types of interviews conducted in qualitative research, and spoke to some of the benefits of semi-structured interviews such as freedom to elaborate and rephrase questions, and to dig
deeper into specific topics that emerged from the participants' answers. To recruit the participants, purposeful sampling procedures were implemented to maximize the richness and depth of the data obtained. The participants, namely Lucy and Stan, participated in semi-structured interviews for the purpose of the study. Both participants satisfied a variety inclusion criteria such as having taught at a school that implemented whole-school DPA. The data was analyzed by examining individual interviews and finding for common patterns and themes across the data. Ethical issues such as consent, risks of participation, right to withdraw, equity, and data storage were also considered. Methodological limitations of the study, such as the importance of numerical data and the need for interpretations by the researcher, and study strengths, such as having the ability to collect detailed data in a naturalistic setting, were reviewed. In the next chapter, I report on the findings of the semi-structured interviews and discuss their relationship with the current literature.
Chapter 4: Research Findings

4.0 Introduction

The following will be a discussion of teachers' experiences with whole-school daily physical activity. To answer the main research question, which considers elementary school teachers' perspectives on whole-school DPA and its outcomes for students and teachers, two teachers were interviewed. Both teachers were at schools that effectively implemented whole-school DPA. The interviewed teachers indicated resources they used, strategies that were implemented, and challenges they faced. The following are the main themes that were indicated by the participants:

- Participants indicated outcomes resulting from whole-school DPA namely emotional and health benefits, academic benefits, and an improved outlook on physical activity,
- The participants listed a variety of approaches to whole-school daily physical activity including effective locations and a time management structure,
- Participants discussed strategies such as technological and text resources, teacher motivation and confidence, and time management techniques that can aid teachers in effective whole-school DPA implementation, and
- Participants faced challenges implementing whole-school DPA involving administrative requirements and personal confidence, but those challenges could be met through a supportive and flexible professional environment.

These main themes have sub-themes that further elaborate on the findings of the participants in terms of the main research question. First, the themes and sub-themes will be described, then the
data will be reported and finally the connection to literature will be discussed. Lastly, the findings will be summarized and next steps will be recommended.

4.1 Participants Indicated Outcomes Resulting from Whole-School DPA Namely Emotional and Health Benefits, Academic Benefits and an Improved Outlook on Physical Activity

Many benefits can be seen from participation in physical activity every day. Both the teachers described and agreed on many positive outcomes that are seen in students resulting from participation in physical activity each day. These positive outcomes can help promote healthy students who are better equipped to be successful at school. The teachers described emotional/health benefits, academic benefits as well as an improved outlook towards DPA.

4.1.1 Participants indicated that students who engage in DPA demonstrate emotional and physical health benefits

The interviewed teachers described that they both saw the students benefit from participation in physical activity each day. Stan explained that there are many reasons that DPA impacts students' success at school, namely academic, physically and mentally. He stated students who are engaged in physical activity each day “[learn] the ... importance of being active.” The teacher explained that DPA instruction for primary students instills good habits at a young age. If teachers and schools create an atmosphere that values physical activity and make it a part of the daily schedule, the students will pick up on that and see the importance as well.

In addition, the participants described the emotional benefits seen from DPA. Stan explained that the students were “calmer, more relaxed and more focused. Happier kids lead to a happier school.” He explained that participation in physical activity helped decompress the
students, help them unwind in his class and elevate their mood. This, in turn, lead to a more positive school atmosphere. Additionally, students were calmer after being physically active and provided teachers with a time to relax when the student leaders taught the DPA.

Despite the benefits mentioned by Stan, Lucy explained that she did not directly notice a change in the school climate because of whole-school DPA implementation. That being said, she assumes there are such benefits. She stated that:

I haven't seen any differences, but feels there would be. I'm pretty sure we all know that when they're healthier, they're happier. When they're healthier, their brains work better. I know there are a lot of benefits to it.

Lucy did not see any direct physical health benefits from DPA or any change in the school spirit. Despite not seeing direct benefits of DPA, Lucy did describe some indirect benefits. She explained that the students really enjoyed participating in DPA, especially since “everyone can be successful.” She explained that all students have the ability to properly participate in DPA and can feel confident in their ability to succeed. Even students who may lack coordination can still enjoy themselves and be successful at DPA.

Research indicates that exercise and other physical activity produce endorphins, which are chemicals that act in the brain as natural painkillers (Stress and Exercise, 2016). This suggests that one reason teachers see benefits in this area are a result of the endorphins released during DPA that yield more relaxed and happy students. Paluska, and Schwenk, (2000) indicate that physical activity can reduce stress among its participants. It has the same relaxing or calming effects as meditation. In addition, the fact that Participant B didn't note any immediate changes
as a result of DPA potentially aligns with research on the subject. Research suggests that participation in physical activity at a young age may not necessarily change the physical health of the students immediately, but it can successfully reduce the risk of developing many health conditions in adulthood (Warburton, et al., 2006). While not all teachers see results from DPA and not all students demonstrate changes as a result of DPA, research suggests that physical activity is important for students' mental and physical health.

4.1.2 Participating in DPA benefits the students' academic achievement

Students who were active during the day demonstrated a variety of academic improvements. To begin, students showed improved focus and retention after participation in physical activity. Stan stated that

Academically, students perform better when they are getting a break to be active, to be moving. Students aren't meant to be in a chair for hours upon hours so it gives them a little bit of a break to recharge. Recharge their brain, recharge their bodies and you see improved academic focus and academic retention.

He described students to be more successful academically when they have the opportunity to rest their brains and have the chance to get their bodies moving. He explained that students who get a chance to relax their minds and focus on DPA demonstrate improved academic focus and in turn, academic retention.

DPA provides students with the time to let their minds rest while they exercise their bodies. Stan explained that “[DPA] allows [the students] to calm and re-centre themselves. Get
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themselves ready for whatever is going on after, as well.” Students often need a time to let out all of their energy so that they can, once again, focus on the academic tasks given to them.

DPA may impact students' academic ability. While Lucy did not note any increased academic success resulting from DPA, she did claim that “when students are healthier, their brains work better.” Despite not seeing any tangible evidence that DPA positively impacts the students' academic ability, she assumed the students should be more successful. Lucy did not see any setbacks from the 20 minutes each day taken away from instructional time.

Research suggests that DPA can aid in academic achievement. Atkinson (2015) explains that participation in physical activity each day can boost academic performance in students. In addition, long term participation in physical activity can produce short-term benefits of increased concentration and long-term benefits of enhanced cognitive abilities (Taras, 2005). In accordance with Lucy's beliefs, Trudeau and Shephard (2010) found that students who participated in physical activity during school hours demonstrated academic success despite having less academic instructional time than those who did not miss instructional time. Therefore, even if students do not demonstrate significant academic improvement, as seen by Lucy, it appears students' academic ability may not be hindered by a daily 20 minute loss of instructional time.

4.1.3 Whole-school DPA can improve student and teacher outlook on physical activity

DPA can influence enthusiasm for physical activity. Participants found that students who participate in DPA become more motivated to ensure they are physically active each day and all people involved in the school demonstrated increased enthusiasm for physical activity. Schools that participated in whole-school DPA experienced enthusiasm among both the students and the
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teachers towards physical activity. Stan explained that the students held themselves accountable to participate in physical activity each day. If the school day was approaching its end and the teacher had not yet lead a DPA activity, the students would take initiative and remind the teacher to do so. Their motivation was tied to the idea of DPA being a friendly competition among the classes. Stan stated that “the students were more motivated [and] they saw it as a way to connect [to] the entire school.”

Further, at both the participants' schools the leading DPA teacher make use of older students in the older grades to act as leaders. The participants explained that at their school, the older students would learn the DPA routines and lead the activity for the other classes at the school. The older students were given the opportunity to be leaders at the school and take responsibility for this aspect of the curriculum. It motivated the older students to participate in DPA since they were the leaders, and it motivated the younger students because they were looking up to their peers taking on a leadership role, in place of their teachers.

Lastly, at the interviewed teachers' schools, the staff and students were enthusiastic about DPA. At one of Stan's schools, DPA was turned into a friendly competition so the students were excited and enthusiastic to participate in the physical activity. At Lucy's school, the gym teacher was highly enthusiastic about DPA and created engaging exercise videos for the students. Thus, the students were enthusiastic about participating, as well. Also, Stan created a “no judgment atmosphere” in his classroom, which promoted optimism and enthusiasm for DPA in his class.

Research indicates that increased participation of students in leadership roles may be an example of the increase self-esteem/self-worth noted by Joseph, Royse, Benitez, and Pekmezi, (2014). The authors explain that participating in physical activity demonstrated an increase in
self-esteem among youth. It is possible that this leadership and accountability will have the positive side effects listed in literature of increased self-esteem and increase perceived physical competence, which is important for students to deal with and prevent the onset of more serious mental health issues (DeMarco & Sidney, 1990). Therefore, in addition to connecting with the rest of the school, providing older students with DPA leadership roles may influence self-esteem and physical competence in those students.

4.2 The Participants Described a Variety of Structural Approaches to Daily Physical Activity Including Aspects Such as Location, Time Management and Leadership

The teachers mentioned a range of locations that best suited DPA implementation. Additionally, teachers indicated certain time schedule that can promote effective whole-school DPA. The teachers describe possible DPA leadership roles for members of the school to guide DPA activities. These approaches provide suggestions for teachers to understand and utilize the available resources and strategies to aid in effective DPA implementation

4.2.1 DPA can effectively take place in any available location both in and out of the classroom

First and foremost, the teachers discussed the classroom as the primary location for DPA. During whole-school DPA, both teachers described the activities taking place in the classroom. While in Lucy's experience, whole-school DPA meant that the exercise CD and music would be played over the intercom system and the older students would lead the activity in front of the class, Stan explained that each day of the week the teachers would implement a different pre-planned activity for the students that took place mainly in the classroom.
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In addition to the classrooms, other locations within the school could also be considered for DPA implementation. At one of Stan's schools, whole-school DPA took place in many locations in the school including the gym and large multi-purpose areas. Using the gym or multi-purpose area can provide a large space with minimal hazards. Stan did report, though, that the gym is often occupied with health/gym classes and assemblies, so it may not be the initial choice for teachers to use.

One place that provides a lot of space and is almost always available to the teachers is the outdoors. Stan explained that at least one DPA activity each week took place on the playground. Relay races was one such activity. Stan also explained that sometimes DPA can be as simple as a walk for 20 minutes in the neighbourhood or around the playground. Additionally, he said that “it's important to get the kids outside as much as possible” when weather permit because the students benefit from the fresh air.

Research suggests that DPA can effectively be implemented in the classroom. In congruence with the teachers' experience, the Ontario Ministry of Education (2005), has provided a variety of activities that can be conducted safely in the classroom. The activities listed often do not need a lot of space and do not require any furniture to be moved. Teachers who primarily only have access to their own classroom can utilize the activities provided in this document for safe and effective DPA programs. The research suggests that it can be challenging to use gyms and/or multi-purpose areas for DPA since they often are used for other programs at the school and may not be physically suitable (Ontario, 2005). Therefore, as Stan stated, gyms and multi-purpose areas may not be optimal locations for teachers to implement DPA. Research suggests that teachers should not rely on the outdoors as a primary location for DPA because of
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extreme weather conditions or difficulty maintaining safety and structure (Ontario, 2005). While the findings of this study suggest that non-classroom spaces such as the outdoors, gym, multi-purpose areas can be used for DPA, research suggests that often those areas are not available or safe to use. Further research into the successful use of alternative DPA locations would be valuable.

4.2.2 Providing teachers with a time management structure for DPA can promote effective whole-school DPA activities

Participants indicated the importance of supportive teachers and administrators who are willing to compromise and adjust the daily schedule to fit 20 minutes of physical activity. Both participants explained how challenging it can be to find time to teach the entire academic curriculum, let alone, the DPA requirements. Stan stated that “the schedule that [teachers] have currently, with all the other subjects, is pretty big and every minute is important … DPA is just another thing that's added to the plate and they don't think it's as important as the other [subjects].” Teachers often focus their time and attention on subjects they believe are more important, such as math, literature and science, and as a result spend less time on DPA. Lucy mentioned that teachers feel pressure to cover a lot of material during the day, and many teachers do not think they have the time for DPA.

Participants indicated that staff and school administrators are encouraged to be flexible with the location, type and time that the daily physical activity be provided at the school. Stan suggested that teachers should have the flexibility to instruct DPA at any point during the day, rather than at a set time. He explained that every class has a different schedule so flexibility for the teachers reduces disruption throughout the day. Lucy indicated that whole-school DPA at a
set time was extremely disruptive for her, as a mixed-grade ESL teacher. She explained that the older students would have to leave for the DPA leadership training and then they would fall behind the rest of their classmates as a result. In addition, if students had a class with a rotary teacher during the whole-school DPA activity, it would significantly cut into their already limited instructional time. Stan did mention, however, that instructing DPA at different times each day, without creating a regular time in the schedule has the potential for teachers to forget or lose track of time for it. Stan also described how many teachers employ DPA “as an afterthought when they have some time to waste … they do the DPA, but they won't do it in a meaningful or engaging way.”

Contrary to the participants accounts of insufficient time in the schedule for DPA, research suggests otherwise. Studies reveal that students who participate in physical activity during school hours do not necessarily fall behind, but rather demonstrate academic success despite having less academic instructional time (Trudeau & Shephard, 2010). Students demonstrate higher cognitive abilities, such as improved concentration, focus, and retention of information after they participate in physical activity (Anxiety and Depression Association of America, 2016). Therefore, replacing 20 minutes of instructional time with DPA can, in fact, aid in students' academic performance. This differs from participants’ accounts, in that while the research suggests that missing instructional time for DPA will not hinder the child's academics, the teachers feel a time pressure to complete all the mandatory academic material. Perhaps administrators and teachers should be made aware of this research. Research could further explore why teachers and administration may view DPA as less valuable than other curriculum expectations and determine methods to address this mismatch.
4.2.3 Participants suggested different effective candidates for the leadership DPA role including the older students, homeroom teacher and the physical education teacher.

Student leaders can be an effective way to lead whole-school DPA. Both interviewed teachers stated that their school used this specific strategy to help ensure DPA was being competed properly. Stan and Lucy stated that using the older students to act as leaders for whole-school DPA was effective in ensuring that all classes receive similar activities. In addition, Lucy explained that “they … give the kids leadership roles. … the grade-5 teachers would teach their kids routines and then two kids from those classes would go to each class and lead the rest of the school in [DPA].” Stan, on the other hand, indicated that the gym teacher taught the grade-5 DPA leaders. Student leaders receive the skills to lead and understand DPA. In addition, the older students are also more motivated to be physically active because they are given the leadership opportunity and the younger students look up to them. Student DPA leaders provide structure, consistency, and ensure that all classes receive similar instruction. Student leaders can enable the homeroom teacher to use the DPA time for other purposes such as planning or marking.

Homeroom teachers can provide effective DPA activities for their students. Stan explained that at one of his schools the physical education teacher would create mapped-out DPA activities for the week and the homeroom teachers would lead those activities. This strategy allows the teacher to implement the DPA activity at his/her leisure throughout the day. Stan explained that while this method did allow for some freedom and flexibility, if DPA is not specifically written at a certain time in the daily schedule then teachers may lose track of time and forget DPA.
The physical education teacher was also described as an effective DPA leader. When whole-school DPA is implemented for all classes at the same time, it was often the gym teacher who leads the activities. Lucy explained that the gym teacher would create exercise CDs for the purpose of DPA which would be played over the public-address system each morning. This strategy, while disruptive at times, was successful since the gym teacher was motivated and confident in DPA implementation. The gym teacher utilized prior physical education knowledge to create meaningful and engaging whole-school DPA activities.

The limited literature surrounding DPA leaders aligns with the experiences of the teachers. The Ontario Ministry of Education (2005) explains that lack of experience in knowledge of physical education can impair teachers' ability to lead effective DPA programs. However, gym teachers have a strong understanding of physical education and are therefore prime candidates to lead DPA. There are also many activities available to teachers online which teachers can utilize in their own leadership of DPA. While teachers have access to a variety of resources to use for DPA implementation, there is a lack of research discussing the effectiveness of the resources. Additionally, both teachers discussed the use of student DPA leaders as a successful strategy for whole-school DPA implementation. This strategy may have limited literature and should be further researched to determine strategies and success rates.

4.3 Strategies Such as Technological and Text Resources and Teacher Motivation and Confidence Techniques Can Aid Teachers in Effective DPA Implementation

While the teachers agreed that few resources were necessary for effective DPA implementation, certain strategies came up more than once. Providing teachers with access to effective resources can increase teachers' comfort levels and assist teachers with DPA
implementation strategies. Both teachers explained that motivation and teacher confidence is a crucial component for DPA to be led effectively. As well, teachers need to have a strong understanding of how to properly teach DPA.

4.3.1 A variety of technological and text resources are available to support DPA implementation

Technology can be extremely useful for teachers in DPA implementation. Both teachers discussed the utilization of home-made resources that they themselves, or fellow teachers created, such as exercise tapes or videos. Lucy discussed the use of pre-recorded CDs that the school would play over the public-address system during school-wide DPA each morning. She stated that even after whole-school DPA stopped being implemented, the teachers continued to use the recordings in their own classroom. When her school first implemented whole-school DPA, teachers did not have easy access to the internet. As a result, they often created home-made resources to aid in DPA implementation. Stan stated that many of the teachers “recorded their own exercise videos and used that [sic] as one of their [DPA] activities.”

Both interviewed teachers indicated that they drew on technology while implementing effective DPA in the classroom. To begin, Stan discussed that he and the other classroom teachers made use of social media to motivate students to participate in school-wide DPA. Stan explained that DPA at his school was made to be a competition among the classes. He said that “teachers were encouraged to take photos or videos of the class participating in DPA every day and would post it on the class Twitter account.” Using social media at that school allowed the parents and other classes to follow the progress of the students in the class. It also motivated the students because they could see pictures and videos of themselves participating in DPA when they were at home. In addition to social media and recorded exercise videos, the teachers stated
that they used other technological resources such as the internet. Many free or inexpensive resources are available to teachers online. Stan explained that he utilized “YouTube videos from the Just Dance collection.” Another website mentioned was GoNoOdle. These websites provide instructional videos for the students to follow. Since often being 3-5 minutes long, the teacher can utilize a range of styles and activities for the class during the 20 minutes.

According to the literature, there are many online written resources that teachers can utilize. The Ontario Ministry of Education (2005) has provided many DPA activities that can be taught within the classroom and that can be varied based on the needs of the class. Another document provided by The Ontario Ministry of Education (2005) entitled *Daily Physical Activity in Schools*, also provides creative and engaging DPA activities for students. Research aligns with the experiences of the teachers in that many DPA resources that are available. One study demonstrated that technology utilized in the context of physical activity can be motivational for its users (Hurling, at. al., 2007). While research discusses many traditional online written tools that teachers can utilize, the participants suggested using a wide variety of now well-recognized application such as YouTube and GoNoOdle. The literature, however, does not discuss these more novel technologies in the context of DPA that the teachers noted as beneficial. Research investigating novel technologies useful specifically to DPA may be valuable.

4.3.2 Participants stressed the importance of teacher motivation, confidence and guidance to create effective DPA activities

Both teachers explained that being motivated with a positive attitude towards daily physical activity is important for effective DPA implementation. Lucy stated that “most teachers [at her school] have a positive attitude towards DPA.” She explained that the teachers at her
school are very athletic and active, which may be a contributing factor to DPA success at her
school. Stan expressed that at his school, creating a school-wide DPA competition was
motivating for both students and teachers. The students ensured that the teachers lead DPA
activities each day to ensure that their class stayed in the competition. He also declared that
“effective DPA [doesn't] need anything fancy, [the teacher] just needs to be committed.”

Providing proper training can assist teachers in creating and leading effective DPA
activities. Stan stated that “a lot of teachers these days don't have the physical education
background to come up with [DPA] programs. Even guided activities are very hard for them to
do.” It can be challenging for teachers to create DPA activities on their own without any training.
Therefore, teachers can benefit from proper guidance to be successful. Both participants
explained that the teachers at their schools were given support and guidance to aid their DPA
activities. Stan explained how at one of his schools the gym teacher one mapped out every DPA
activity for each week. That way the teachers fully understood the activity and its
implementation. Lucy stated that student leaders were used at her school for DPA. The students
were taught the DPA activities and the teachers could follow the activity alongside the students.
The teachers learned from the trained student leaders.

Having pre-planned DPA activities promotes confidences among the teachers since they
understand the mapped-out DPA expectations. For both teachers, the DPA activities were
mapped out by a teacher who took a leadership role. Stan explained that “Fridays were YouTube
videos from the Just Dance collection … we had Wednesday Walking, we had playground days
on Thursday.” The activities for the classes were created by the gym teacher who was supportive
and motivated. Lucy explained that the teachers at her school would teach the DPA student
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leaders and the leaders would share the workout with the other classes. She also explained that
the workouts would begin with a warm-up, followed by an activity and a cool-down. The
activities would vary from running on the spot to popular dance steps. Both teachers explained
that they would make use of a scope of resources that were given to them by the leading DPA
staff member. These resources ranged from social media, videos from the internet and home-
made exercise CDs. Providing pre-planned activities and access to effective, easy-to use
resources can promote teacher confidence in DPA. Additionally, teachers taking a leadership role
in fostering whole-school DPA provided guidance to the other teachers.

Research aligns with the statements of the teachers. It suggests that many teachers, in
fact, are not confident in their ability to create meaningful and engaging DPA activities. The
Ontario Ministry of Education, (2005) suggests that many teachers have little to no background
or proper guidance in the subject of physical activity. This may explain why so few teachers are
effectively implementing it. Additionally, Brown and Elliott, (2015) explain that DPA is often
undervalued by schools compared to other subjects which may factor into the lack of teacher
motivation. Many teachers and schools do not value DPA in the same way that they value other
subject areas and therefore teachers to not allocate the proper amount of time for DPA and
choose to spend that time focusing on other subjects. Therefore, providing teachers with proper
guidance and making teachers aware of the value of DPA can increase motivation and
confidence which will, in turn, help them create meaningful DPA activities.
4.4 Participants Face Challenges Involving Administrative Requirements and Personal Confidence, But Those Challenges can be Met Through a Supportive and Flexible Professional Environment

The teachers described a variety of challenges to effective DPA implementation in schools. They explained that there often is not enough time in the schedule, given the other curriculum requirements. Flexibility in the schedule can provide teachers with the time they need to implement DPA. The participants explained that there often is a lack of easily accessible resources that are available to them. Administrators, the teachers said, should provide a range of resources that aid in DPA implementation. In addition, the participants explained that many teachers lack the confidence and motivation in DPA execution. Having a supportive staff team and administration can provide comfort and assistance to the teachers.

4.4.1 Participants can overcome schedule challenges by being more flexible about when DPA is implemented

The interviewed teachers explained that there is often a lack of time in the schedule to fit in DPA. Lucy explained that the prep time for teachers has gone up so teachers often feel they can no longer afford to fit DPA into the teaching time during the schedule. She also explained that “there's a lot of pressure to get a lot of stuff done. Even with the little kids.” Stan affirms that “finding time in the schedule [for DPA] can be difficult. To say that everyone will do DPA at the same time every day is hard because everyone's schedule is different.” Each class has a different schedule to follow and often the times cannot be changed. In addition, teachers feel pressure to skip DPA and focus on academic subjects.
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The participants explained that flexibility in the timing of DPA implementation is an effective strategy to overcome many of the scheduling challenges. Stan explained that leaving the time for DPA implementation up to the teachers' discretion can allow them to manage their time more effectively.

Research findings are congruent with the experiences of the participants. Brown and Elliott (2015) found that often teachers and principals put less value on DPA compared to other curricular subjects since it is monitored less and there are no specific expectations beyond the length being 20 minutes. This aligns with the beliefs of the participants and suggests that principals and school administrators should, perhaps, outline specific expectations for DPA and stress that value of DPA.

4.4.2 Participants feel that the challenge to find adequate DPA resources should be met by administration providing more resources

The teachers explained that accessing useful resources and space for DPA is often a challenge. Stan explained that for most activities, DPA can be done in the classroom, but occasionally large open spaces like the gym or a multi-purpose space may be required for the intended activity. That being said, they often are in use for other classes and/or assemblies. Finding a proper location that is available and safe to lead DPA is often challenging for teachers. He also explained that “the same way [teachers] get resources in math or science or language, to give them support, they also need in DPA.” He stated that teachers are not provided with text and online resources unlike all the other curriculum subjects.
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To address these challenges, the participants explained that the administration should meet the DPA resource needs of the teachers. Stan stated that at his school the support of the administration made DPA implementation “pretty easy.” He explained that the gym teacher created a DPA program for the whole-school to take part. “He set up the program and set up calendars and told [the teachers] what [they] were doing each day.” The supportive staff created and provided resources for the teachers and thus, the teachers could successfully and effectively implement meaningful DPA activities.

Research further affirms the experiences of the teachers as the Ontario Ministry of Education suggests that teachers often do not have access to technology, such as projectors/computers, or the internet in the classroom and are unable to use many of the online DPA resources (Ontario Ministry of Education, 2005). In addition, teachers often do not have access to the gym, multi-purpose area or even the outdoors for the purpose of DPA activities (Ontario Ministry of Education, 2005). In contrast to the lack of resources as mentioned by the participants, research suggests that there are several resources provided by the Ontario Ministry of Education. It has created a resource for teachers that describes a variety of activities that can be done both within and outside of the classroom (Ontario Ministry of Education, 2005). It also provides variations to the activities for the different needs of the students (Ontario Ministry of Education, 2005). While teachers often find that it can be challenging to access useful resources to aid DPA, the literature suggests that there are online resources that teachers can access to aid DPA.
4.4.3 One way teachers can overcome their lack of confidence and/or motivation is by having supportive administration

Both participants agree that often teachers lack confidence and/or motivation in their ability to lead DPA activities. Stan explained that “a lot of teachers these days don't have the physical education background to come up with [DPA] programs and even [the ones provided] are hard for them to do.” He explained that it goes beyond teacher confidence, but rather teacher education and comfort level towards physical activity.

In response to the lack of confidence and motivation many teachers feel towards DPA, the participants suggested possible solutions. Lucy explained that people need to feel strongly towards DPA and those teachers can influence, motivate and teach the other staff members. She explained that at her school, DPA was incredibly successful since there were so many teachers who were confident in their understanding of physical activity and motivated to implement it daily. Stan, further asserted that staff confidence and commitment is crucial for DPA to be implemented most effectively. He stated that:

The main thing is to get the staff on board, whether it be a phys-ed teacher to run the program and set it up, or classroom teachers who are confident, motivated and have knowledge in physical activity, so not only are they going to run it, but it’s going to be an engaging thing. Another thing that supports it is having a really supportive administration who stresses the importance of daily physical activity to their staff.

He explained that the support of the staff and administration can help teachers become more confident and more motivated to lead DPA activities. Stan further explained that teachers who
are motivated put a lot of thought and effort into their DPA activities so that they are authentic and engaging for the students. He mentioned that ensuring teachers have access to resources is the main way to boost teacher confidence in DPA.

The research is congruent with the experiences of the participants. A Government of Ontario (2005) DPA document explains that many teachers have little to no background on the subject of DPA. Further, the DPA mandate requires that teachers adapt the DPA lesson to the different needs of all the students and many teachers find it challenging to create lessons that are both engaging and adaptable (Ontario Ministry of Education, 2005). These literature findings, along with the findings of this study suggest that teachers may not be educated in physical activity. Providing teachers with professional development in this topic can provide assistance.

4.5 Conclusion

Throughout the analysis process, four main themes occurred. While many of the themes were congruent with the current literature, a few ideas mentioned by the participants were not identified by the literature or did not fit the ideas described by the literature. Both the literature and the participants agreed that DPA is important for students for a wide range of reasons. While the literature explained that there are notable physical and mental health benefits as well as academic benefits, the findings of this study demonstrate that teachers do not see any visible benefits from whole-school DPA. This suggests that teachers may not be leading effective DPA activities for the students.

The literature and the above findings agree that the location for DPA is flexible and can effectively be executed both in and outside the classroom. Additionally, these findings are
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congruent with the literature on the idea that having mapped-out activities for DPA can increase its effectiveness. Further, the findings of this study indicate the importance of teacher motivation and confidence. Confident teachers have the understanding and motivation to lead proper DPA programming for students. The literature, however, avoided those topics and instead only discussed practical/tangible strategies teachers might use to implement DPA. There may be a gap in the research surrounding strategies to boost teacher motivation and confidence in DPA implementation,

Lastly, many challenges and solutions to DPA implementation were found. The literature supported the experiences of the interviewed teachers, noting that there often is a lack of administrative support, resources and space available to teachers for the purpose of DPA, and provided additional solutions for teachers such as DPA activities that can be implemented within the classroom environment using few resources. Both teachers noted the use of student leaders in directing whole-school DPP. While this strategy has been found useful to the teachers, limited research has been found on the effects utilizing student DPA leaders. Additionally, both teachers discussed the important role technology played in the implementation of whole-school DPA, however, there may be a gap in literature discussing the effects of technology and strategies to use it properly for the purpose of DPA.

Going forward, more research should be done to consider how to aid teachers with time-management. Researching scheduling and structure that are effective for whole-school and class-wide DPA during the school day can provide insight into effective time-management strategies for teachers. Additionally, research should consider strategies to provide teachers with effective professional development in physical education since many lack a basic understanding. As well,
more research should examine the use of students to lead DPA activities to better understand its effectiveness and success for the whole-school approach. Lastly, the use of technology to aid with DPA implementation should be researched further, examining specific applications that can be used and student engagement. In the areas of scheduling DPA, professional development in physical education, student DPA leaders and the use of technology accompanying DPA, the findings of this paper provide some insights that warrant further research. It is important that further research be conducted as DPA is incredibly important to students to many reasons.

Next in Chapter 5, broad and narrow implications for these findings will be discussed, recommendations will be given, and potential areas of further research will be noted.
Chapter 5: Conclusion

5.0 Introduction

In this chapter I discuss the implications of my research findings. I begin by providing an overview of the key findings and discuss their significance with respect to the current literature and involved parties. Next I explain the implications and demonstrate important findings for the teaching community. I make connections between policy and practice and provide recommendations to various stakeholders improve DPA in schools. Areas for further research are indicated. The chapter concludes by summarizing the findings and demonstrating their significance.

5.1 Overview of Key Findings and their Significance

The key findings of this research were organized into four main themes. The first theme describes physical, emotional and academic benefits of whole-school DPA for students and outlook of students and teachers. Both participants indicated their belief that physical education was important for students each day. Lucy explained that DPA teaches the students the importance of life-long physical education at a young age. Stan noted that the students were calmer, more relaxed and better able to focus after participating in DPA. While the teachers did not directly detect any physical health benefits from DPA, research suggests that there are both short-term and long-term health benefits from participation in DPA. Additionally, both teachers explained that participation in physical activity can promote enthusiasm and competence in physical activity. Therefore, it is essential that teachers provide effective DPA with enthusiasm,
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competence and confidence so that students can benefit from the range of benefits including physical health, emotional health and academic success at school.

The second main theme described a variety of approaches that can yield successful DPA. The participants indicated that there were multiple locations that were used for the purpose of DPA including the gym, outdoors and classroom. Lucy indicated that an appropriate time-management approach was important for whole-school DPA to be successful. She explained that whole-school DPA was often disruptive. Stan provided a solution indicating that teachers should have the flexibility to choose an appropriate time to implement DPA for the students. Additionally, both teachers described possible leaders for whole-school DPA including the homeroom teacher, the physical education teacher and the older students. While each of these approaches have their own strengths and challenges, it is up to the teachers and administrators to determine the strategy that best fits the school.

The third theme found in the research outlined different strategies and resources used to implement effective DPA. Technology was described as a resource that was often used in DPA implementation. It was used in many facets including the creation of exercise CDs, online text resources, videos, and other applications from the internet. Both participants discussed teacher motivation and confidence as an important factor to successful whole-school DPA implementation. Teachers often lack an understanding of physical education and therefore do not feel confident in their ability to teach DPA. Further, many teachers are unaware of the value of DPA and lack motivation to teach it. It is therefore important to provide teachers with access to DPA resources, professional development and/or pre-planned activities to help boost their motivation and confidence in leading DPA.
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The last main theme spoke to the challenges associated with whole-school DPA as well as possible solutions in response. One consideration that both participants discussed was time in the daily schedule for DPA. Whole-school DPA was found to be disruptive when all classes participated at the same time since each class has a different daily schedule. In response to this, both participants suggested flexibility to the time of day DPA was implemented. Demonstrating the value of DPA to the teachers addresses the issue of lack of motivation among teachers. Additionally, the participants explained that teachers often lack resources to help with DPA. The school administration should provide access to a variety of resources to address this concern. It is for these reasons that school administration should work with the teachers to provide them with resources and professional development to ensure that teachers have strategies for and are confident with DPA implementation.

5.2 Implications

The findings of this study demonstrate important implications for the teaching community as well as myself as a future educator. The following will discuss the implications and describe their importance.

5.2.1 Implications for the education community

Teachers and Educators

The literature, as well as my findings describe the importance of DPA for students in many ways. To begin, there are many implications for teachers and educators as they should be aware of the importance that physical education has for student success in many ways. The teachers who participated in this research study both indicated that healthier students result in
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happier students, an important concern for educators. Participation in DPA also aids in the academic success among students in that it has shown, from both the literature and participant experiences, an increase in concentration. Students are able to more effectively and efficiently complete their work and succeed academically after participation in moderate to vigorous physical activity. Lastly, participation in DPA can improve students' outlook on physical activity. By creating an environment that fosters a positive attitude towards DPA, it promotes students to develop healthy life-long physical activity habits at a young age.

Ontario Ministry of Education/Policy Makers

The literature and my research suggests that there are many implications for policy makers regarding DPA and its implementation. The interviewed teachers suggested that time-management was an important consideration when implementing effective DPA. The teachers found that there often was not enough time during the day to include the 20 minutes of mandatory DPA. Teachers often feel pressure to complete the dense topics of other subject areas and did not feel as if they had time to include DPA. Additionally, the teachers themselves and administration did not value the importance of DPA, therefore teachers did not always include DPA into the schedule and it was not enforced.

Students

It is clear from the research and this study that there are many implication for students regarding DPA. To begin, there are many mental health benefits to students as a result of participation in DPA. The participants explain that when students are healthy, they are also happy. The participants also explained that the students demonstrated a more relaxed composure
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after the participation in physical activity. The literature, as well, demonstrates that participation in physical activity can reduce feelings of anxiety (DeMarco & Sidney, 1990), reduce feelings of depression (Paluska & Schwenk, 2000), and boost self-esteem in students (Joseph, et al., 2014). Additionally, there are many physical health benefits that physical activity has for students. While the participants did not indicate that they witnessed any direct physical health benefits from participation in physical activity, the literature demonstrates that there are many direct and indirect health benefits for children. The direct health benefits include lower blood pressure, promote healthy weight, and reduction of excess fat (Dwyer, et al., 1983). Indirect benefits of physical activity include secondary preventions of many chronic illness including heart disease, stroke and diabetes (Warburton, et al., 2006). Lastly, students also experience academic benefits from participation in physical activity. The participants describe academic benefits such as increased concentration, and retention of information after physical activity. Similarly, the literature suggests that students' experience multiple academic benefits from participation in physical activity.

5.2.2 Implications for me as a teacher researcher

As a future teacher researcher, this study has demonstrated the multi-factorial importance of DPA for students. I understand the importance and value in physical activity for the students and am motivated to properly implement DPA activities in my own practice. This research has provided me with access to and understanding of time-management and hands-on strategies that I can utilize as a part of my own teaching practice.

My research has also promoted an understanding of the importance of keeping current with the literature, and the benefits of using the literature to update my teaching practice. Further,
my research has demonstrated many gaps in the literature regarding implementation strategies and resources for teachers. As a teacher researcher, I will continue to maintain an up-to-date understanding of the literature surrounding DPA. As well, I hope to use my own research to contribute to the field, as it fills some gaps in the literature and demonstrates areas of future research. I hope to publish my findings in some form to provide teachers with my research conclusions. The research process has provided me with the skills to critically analyze the current research and discover possible gaps in the research. Additionally, the process has allowed me to communicate with current teachers about the strengths and challenges to DPA implementation in a variety of schools.

5.3 Recommendations

Based on the research and the findings of this study, the following are recommendations for the teaching and learning community. These recommendations will help ensure that DPA is being implemented effectively in the classroom for students. I have organized the recommendations into categories: Ontario Ministry of Education policy makers, Teachers, students, and School Administration.

5.3.1 For the Ontario Ministry of Education

- Policy makers should develop objective success criteria for DPA to ensure that teachers are implementing DPA and that students participate to the best of their ability.
- DPA should be regulated by the Ministry of Education to guarantee that all teachers at all schools are implementing it effectively.
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- The Ministry of Education should promote DPA research and provide funding for future research to enhance DPA strategies and resources for teachers (see section 5.4).
- The Ministry of Education should disseminate current research findings to school administration/teachers.
- The Ministry of Education should create additional support resources for DPA based on the literature.

5.3.2 For teachers

- Teachers should stay updated on the current research and literature to help develop a strong understanding of the importance and value of DPA. Additionally, the literature can provide teachers with strategies to more effectively implement DPA and access to practical resources.
- Teachers should request helpful resources from the school administration and advocate for themselves if they do receive proper support or guidance.
- Teachers should demonstrate to students the importance of participating in physical activity each day and promote strategies for students to live a healthy and active life.
- Teacher should develop communication material for parents to provide them with an understanding of the implications DPA has for their children.

5.3.3 For students

- Older students can take a leadership DPA role to promote physical activity at their school.
- Students should stay active to reap the benefits that physical activity has to offer them.
5.3.4 For school administration

- Administration should provide teachers with a variety of resources, including technological, text, and practical, to help assist with DPA implementation.
- Administration should provide professional development in physical education for teachers to assist them with strategies and confidence necessary to implement DPA effectively.
- School administration should stress the importance of physical activity and hold teachers accountable for properly implementing DPA in their classes. They should value and ensure the proper implementation of DPA similar to the other curriculum subjects.

5.4 Areas for Further Research

The findings of this study demonstrate that some topics surrounding the discussion of DPA may warrant further research. A main concern the participants discussed were time-management strategies to conveniently fit whole-school DPA into the schedule. While the teachers indicated many concerns with time-management strategies for whole-school DPA, there was a lack of literature surrounding this discussion. Further research could examine effective strategies for implementing whole-school DPA ranging from participation in whole-school DPA altogether in a common space, participation in whole-school DPA simultaneously in individual classrooms, to classes participating in whole-school DPA at flexible times during the day. Knowing different strategies for whole-school DPA implementation can provide schools and teachers with the understanding to choose a strategy that best fits the needs of the school.
Further areas of research may also include effective strategies to provide teachers with professional development. According to both the participants and the literature, many teachers do not have the confidence in physical education to feel comfortable leading related activities such as DPA. Further, many teachers are unmotivated to teach physical activity and do not understand its value for students. Research could examine professional development programs in physical education for teachers to determine how best to increase teacher motivation and confidence.

While both teachers discussed the successful use of students as whole-school DPA leaders, the literature is lacking in this area. Both teachers explained how their school made-use of the older students for the purpose of DPA. The student leaders were described by the participants as being motivated and confident in physical activity/education. Research should study the effectiveness of student DPA leaders and possible strategies for using student leaders. This research could lead to an effective approach for leading whole-school DPA.

Another area that may sanction further research is the use of technology with respect to DPA. Both the participants discussed the important place that technology held in the context of DPA. While literature discusses the use of technology as a motivational tool for physical activity, there lacks research on how technology can be used specifically for DPA. Research can provide awareness to teachers of effective technological programs that can aid with DPA implementation, and strategies to use technological resources to more effectively lead DPA.

5.5 Concluding Comments

Both my research and the current literature describe the importance of DPA for all students. While the benefits range from physical health, mental health to academic, few teachers
are successfully implementing DPA, if at all. Teachers face many challenges upon implementing DPA such as time-management issues, lack of training and resources, and lack of administrative motivation to implement. This research concludes that with the proper training, confidence and motivation, and support from the school administration, teachers should be able to implement effective DPA with few resources and little required space. In my opinion it is important the school administration stresses the importance of DPA and provides teachers with the proper professional development training and resources, teachers need to familiarize themselves with the effects of DPA to understand the value behind it, and policy makers for the Ontario Ministry of Education should enforce DPA implementation. This study has demonstrated to me the importance of DPA and the many benefits it has for the students in multiple ways. Additionally, it has provided me with effective strategies for whole-school DPA that I will be able to apply in my own classroom, and the motivation to take a leading role at my school to ensure my entire school has the proper resources and encouragement to successfully implementing DPA.
References


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Appendix A: Consent Letter

Letter of Consent for Interview

Date: _______________________.

Dear _____________________, I am a graduate student at OISE, University of Toronto, and am currently enrolled as a Master of Teaching candidate. I am interested in learning elementary teacher perspectives on whole-school DPA, including attention to supporting resources, challenges, and outcomes. I think that your knowledge and experience will provide insights into this topic.

I am writing a report on this study as a requirement of the Master of Teaching Program. My course instructor who is providing support for the process this year is Dr. Angela MacDonald. The purpose of this requirement is to allow us to become familiar with a variety of ways to do research. My data collection consists of a 45-60 minute interview that will be audio-recorded. I would be grateful if you would allow me to interview you at a place and time convenient to you. The contents of this interview will be used for my assignment, which will include a final paper, as well as informal presentations to my classmates and/or potentially at a conference or publication. I will not use your name or anything else that might identify you in my written work, oral presentations, or publications. This information remains confidential. The only people
who will have access to my assignment work will be my research supervisor and my course instructor. You are free to change your mind at any time, and to withdraw even after you have consented to participate. You may decline to answer any specific questions. I will destroy the audio recording after the paper has been presented and/or published which may take up to five years after the data has been collected. There are no known risks to you for assisting in the project, and I will share with you a copy of my notes to ensure accuracy. Please sign the attached form, if you agree to be interviewed. The second copy is for your records.

Thank you very much for your help. Sincerely, Rebecca Kogon

Phone number: (xxx) xxx-xxxx

E-mail: rebecca.kogon@mail.utoronto.ca

Instructor’s Name: Dr. Angela MacDonald

Phone number: (xxx) xxx-xxxx

E-mail: angela.macdonald@utoronto.ca

Consent Form I acknowledge that the topic of this interview has been explained to me and that any questions that I have asked have been answered to my satisfaction. I understand that I can withdraw at any time without penalty. I have read the letter provided to me by Rebecca Kogon
and agree to participate in an interview for the purposes described. I agree to have the interview audio-recorded.

Signature: ________________________________

Name (printed): ____________________________

Date: ____________________________
Appendix B: Interview Protocol Introductory Script: Thank you for agreeing to participate in this research study, and for making time to be interviewed today. This research study aims to learn school-wide daily physical activity for the purpose of providing strategies for teachers to implement whole-school DPA. This interview will last approximately 45-60 minutes, and I will ask you a series of questions focused on the benefits and challenges to DPA implementation and student’s success. I want to remind you that you may refrain from answering any question, and you have the right to withdraw your participation from the study at any time. As I explained in the consent letter, this interview will be audio-recorded. Do you have any questions before we begin?

**Background Information**

- How many years have you been teaching?
- Can you tell me your current position? (grade, subject areas, roles in the school)
- What other grades/subjects have you taught?
- Have you taught at more than one school? How many schools?
Can you tell me more about your current school (e.g. size, demographics, program priorities)?

Do you know for how long your school has run whole-school DPA?

To your knowledge, why was whole-school DPA implemented? Who initiated this in your school?

You have shared with me ahead of the interview that DPA is something that you are committed to in your professional practice. For how many years have you been implementing classroom DPA?

How did you become interested and committed to this work?

Did you participate in DPA or any type of structured physical activity as a child?

a. If so, what kinds?

b. Was it part of the school curriculum or extracurricular?

What physical activity, if any, do you personally participate in on a daily or weekly basis?

Teacher Perspectives/Beliefs

What is the role of DPA in schools, in your view? Why do you believe that DPA is important in schools?

Drawing on your own experience in schools, to what extent is DPA typically implemented? What evidence have you seen that it is or is not being implemented?

What do you think are some of the key reasons why some schools and teachers do not implement DPA?

In your view, what are some of the key factors that determine the quality of DPA programming in schools?
As a teacher with experience participating in whole-school approaches to DPA, what have you observed about some of the benefits of this approach? *listen and then probe:

- Academic?

- Relational benefits between students, staff, etc.?

- School climate?

- Physical?

- Mental health?

How, if at all, has the school dynamic changed since the implementation of school-wide DPA?

**Teacher Practices**

- Can you tell me what whole-school DPA looks like in your school?

  - Is it schedule at a particular time of day? If so, when and why?

  - Who leads the whole-school approach to DPA?

  - What are some of the primary activities/strategies? (*listen and then probe re: curricular connections, types of physical activity, dance, forms of exercise etc.)
- Where does whole-school DPA happen? (*listen and then probe re: inside, outside, over the PA system and in individual classrooms, whole-school gatherings in gym or other space)

- What resources are used in your school’s approach to DPA? (*music, videos, internet, guests, equipment etc.)

- What is your impression of how students respond to whole-school DPA?

**Supports and Challenges**

- What are some of the key factors and support resources that need to be put in place for whole-school approaches to DPA to be effective?
- What are some of the key barriers to whole-school implementation that you have observed? How has the school responded to these barriers? What kinds of supports would further help the school respond?
- What challenges have you faced when implementing DPA in your own class? How do you respond to these kinds of challenges?
- How did you gain school-wide support?

**Next Steps**

- In your view, how can teachers initiate whole-school approaches to DPA? What are some of the preliminary steps they need to take and resources that need to be put in place?
- How can teachers and schools effectively implement DPA without extensive resources?
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- What recommendations do you have, if any, for how the school system can further support teachers and schools with implementing the mandatory DPA requirement and/or hold them accountable for its implementation?

- What advice, if any, do you have for beginning teachers who are committed to DPA implementation and to creating a whole-school commitment to DPA in their own schools?

Thank you for your participation in this research study.