

Physical Activity and Student Engagement:
How Physical Activity Contributes to the Culture of Wellness
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Physical Activity and Student Engagement:
How Physical Activities Contribute to the Culture of Wellness

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Abstract

This project examined the research associated with the current state of physical education, physical fitness, physical activity levels, child and youth health problems (pertaining to the lack of aforementioned physical attributes), and their impact on the overall wellbeing of children and youth in North America. Literature review centered on the benefits of integrated programs, the misconceptions surrounding the addition or reduction of allocated activity time, and the impact positive leadership can facilitate within the educational environment of schools. Recommendations were brought forward based on this literature review, which could have substantial impact on the learning capacities of all students and stakeholders associated with the education and wellbeing of children and youth.

Keywords: physical activity, physical education, engagement, obesity, academic performances, inactivity, principal's leadership, unstructured play

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How Physical Activities Contribute to the Culture of Wellness

Chapter 1: Introduction

Education is a shared responsibility involving students, parents, teachers, the school and the community (Alberta Government, 2019). Studies have shown that physical activity provides benefits for individuals including healthy growth and development, preventing of chronic diseases, and providing increased energy levels for cognitive development. Within each day, whether at home, school, or in the community, structured and unstructured time is available to meet the aim of physical education programs that contribute to student well-being. Because the benefits of physical activity increase proportionally as a result of the time and intensity provided, consideration should be given to maximizing the amount of time available within the school context (Alberta Government, 2019). Schools have the unenviable task of shaping youth in all aspects of their lives. Specific challenges facing the education system related to students include: reduction of physical activity time, maintaining appropriate levels of physical activity, physical and mental wellness, student engagement, and an inclusive learning environment. Schools are the ideal environment for the promotion and implementation of all these programs, largely due to their accessibility to students of all ages. Schools also provide opportunities for students to engage in physical activity during specific times during the school day, such as physical education class, recess periods, and extracurricular activities. Nonetheless, schools across the country have reduced the time allocated for physical education, and in some instances, have eliminated it altogether.

Today's students face a plethora of challenges, the least of which involve the day-to-day stressors of school. Obesity is one of the most pressing health concerns for our children today. More than one-third of children and teens are overweight or obese, where physical inactivity is a leading contributor (Trust, 2007). Reduction in physical activity has inadvertently become one of the underlying causes for the rapid rise in childhood health issues. Nationally, the amount of time that is allocated to physical education, physical activity, and physical fitness is declining; this tendency only compounds the problem of inactivity and obesity of children. Available evidence shows that children who are physically active and fit tend to perform better in the classroom (Trust, 2007). To this end, schools can provide an inclusive learning environment and improve student health and wellness through structured and unstructured physical activities.

Statement of the Problem

The current pandemic of physical inactivity threatens both physical and cognitive health throughout children's lifespans (Hillman, 2014). One of the main underlying issues regarding the implementation of physical activities is time allocation. As stated previously, the time allocated for structured and unstructured physical activities is declining, resulting in an increase of inactivity in school-aged children and adolescents. This issue—a lack of student engagement and commitment to physical activities—has been compounded by changes to policies and priorities at schools and school divisions alike regarding levels of achievement. Physical activity does not necessarily have to be vigorous or lengthy to engage students nor to have the desired effects on their behavior. For this reason, it is essential that an interconnection between physical activity, student wellness, and student success be clearly defined and established. Health and education are inextricably linked; the more educated you are, the healthier you are. The healthier you are, the more educated you will be (Gleddie, 2019). This project then focuses on

effective instructional strategies, which, if implemented, could have an impact on student engagement. Through research presented in the following capstone, it is evident that maintaining or increasing the amount of structured and unstructured physical activity time within the context of a school day is essential to improve both physical and mental wellness.

Background Information

The fundamental cause of childhood obesity is the result of a long-lasting imbalance between energy intake and energy expenditure. Childhood obesity has reached epidemic levels in both developed and developing countries. In childhood, being overweight and obese can have significant impacts on both physical and psychological health. Overweight and obese children are likely to stay obese into adulthood (Sahoo et al., 2015). In 2016, The World Health Organization (WHO) stated that there is a prevalence of overweight and obese children and youth aged 5 - 19, with a total of more than 340 million worldwide. The Center for Disease Control (CDC, 2010) recommends daily physical activity (DPA) of at least 60 minutes and emphasizes how schools provide a unique venue for students to grow mentally and physically if these activity recommendations can be fulfilled. Physical inactivity among today's children and youth has been escalating at an alarming rate, with recent reports forecasting that over the next few decades, inactivity will continue to rise throughout much of the industrialized world (Hillman, 2014; Ng & Popkin, 2012). Inactive lifestyles have been found to be detrimental to the health and well-being of children, indicating that the current generation of youth will likely live shorter lives (Hillman, 2014). A substantial proportion of young people have lower physical activity (PA) levels than are recommended for good health (Vertstraete et al., 2006). Canada's youth obesity rate has tripled in the last thirty years, putting these young people at risk for serious health issues. In Canada, one in three children is overweight or obese and less than half

of youth report eating a healthy diet. The increase in obesity rates among children is also dangerously high. About 13% of children between the ages of 5 and 17 are obese, while another 20% are overweight (Government of Canada, 2016). Less than 10% of Canadian children and youth aged 5 to 17 obtain the daily recommended 60 minutes of physical activity (Public Health Agency of Canada, 2017). Obese youth have an elevated risk for health problems such as heart disease, type 2 diabetes, high blood pressure, unhealthy blood cholesterol patterns, and other health risks related to cardiovascular disease. Obesity can also have serious ramifications for kids' cognitive development and can affect school attendance. Student fitness levels and obesity rates are directly correlated to the decline in physical education and activity time in school. Evidence has shown the reduction in physical activity can affect academic performance, thus increasing the emotional impact of obesity and make ridicule by peers more evident. In turn, this pattern increases the relation between obesity and low self-esteem (Pino-Juste et al., 2016).

Many Canadian children and youths' participation in the required amount of physical activity on a steady decline, and conversely are spending too much time in front of screens, which is particularly harmful for these children in the developmental years. Inactive lifestyles have a detrimental effect on the health and wellness of students. To an extent, schools have contributed to the escalation of this problem, in part from policy changes and program restructuring that reduce the amount of physical activity time embedded into school schedules. Physical inactivity among today's children and youth has been escalating at an alarming rate, with recent reports forecasting that, over the next few decades, inactivity will continue to rise throughout much of the industrialized world (Ng & Popkin, 2012). A substantial proportion of young people have lower physical activity (PA) levels than recommended for good health

(Vertstraete et al., 2006), resulting in the increased risk of health issues such as obesity and type 2 diabetes.

Inactive lifestyles have a detrimental effect on the health and wellness of students. As emphasized previously, schools have contributed to the escalation of this problem in part from policy changes and program restructuring that reduce the amount of physical activity time embedded into school schedules. The value of physical education classes, unstructured physical activity time, and school-based activity programs has seen a sharp decline in perceived importance and necessity. Schools themselves have contributed to the increase in physical inactivity through the implementation of programs and policies aimed at minimizing or replacing physical activity opportunities within the school day. Canada and the United States have had their respective national health agencies make recommendations stating that children and youth should receive 60 minutes of moderate levels of physical activity each day. Estimates show that only 3.8% of elementary schools, 7.9% of middle schools, and 2.1% of high schools provide daily physical education (Troost, 2007).

Purpose

The purpose of this study is to review research data regarding the problem stated earlier: a lack of student engagement and commitment to physical activity. Further, the purpose is to identify the problems associated with decreased physical activity time, to explore how leadership can implement strategies to encourage student engagement in school-based activities, and to study the impact that school culture might have on lifelong physical activity and wellness.

Definition of Terms

Affordance- When the physical environment and the object and features of that environment *afford* the possibilities for numerous types of actions (Herrington, 2015).

Body Mass Index - dividing a person's weight in kilograms by the square of the person's height in meters (CDC, 2018).

Brain breaks - a brain break is a short mental break that is taken during regular intervals during classroom instruction. Brain breaks are usually limited to five minutes and work best when they incorporate physical activities (Cox, 2019).

Comprehensive School Health - an internationally recognized approach to supporting improvements in students' educational outcomes while addressing school health in a planned, integrated and holistic way (JCSH, 2019).

Daily Physical Activity (DPA) - the planned and spontaneous physical activity that people do on a daily basis (Alberta Education, 2006).

Diabetes - a chronic disease that occurs when the body is either unable to sufficiently produce or properly use insulin (Government of Canada, 2011).

Leadership - to provide direction, to create the conditions for effective peer interaction, and to intervene as needed when things are not working as well as they could (Fullen, 2008).

Moderate to vigorous physical inactivity (MVPA) - an insufficient physical activity level; according to the present physical activity recommendation, not achieving 60 minutes of moderate to vigorous physical activity (CSEP, 2017).

Obesity - defined as a Body Mass Index (BMI) at or above the 95th percentile of children and teens of the same sex and age (CDC, 2018).

Physical activity - any bodily movement produced by skeletal muscles that result in energy expenditure and increased heart and breathing rates (CSEP, 2017).

Physical fitness - the heart, lungs, and muscles have to perform at a certain level for the individual to continue feeling capable of performing an activity (Hardcastle, 2006).

Physical inactivity - insufficient physical activity levels to meet current physical activity recommendations that apply to all ages and ability groups (CSEP, 2017).

Physical literacy - the motivation, confidence, physical competence, knowledge and understanding to value and take responsibility for engagement in physical activities for life (Taplin, 2017).

Sedentary Behavior - waking behavior with low energy expenditure (Colberg et al., 2016).

Wellness - a balanced state of emotional, intellectual, physical, and spiritual well-being that enables students to reach their full potential in the school community (Government of Alberta, 2009).

Statement of Research Questions

Physical activity and student engagement are key components of most school settings regardless of grade classification. This capstone will focus on answering the following research questions:

1. What are some indications physical activity contributes to a culture of wellness in an educational environment?
2. What is the role of a leader in the development of a school culture that values wellness?

Outline of the Remainder of Paper

Chapter 1 outlined the focus of this capstone and highlighted the problems associated with declining levels of student engagement in physical activities. Chapter 2 presents a review of current literature and research that offer possible programs and solutions designed to improve school environments. The role school leaders have in these solutions will be examined as well.

The final chapter includes recommendations that could be implemented by educational institutions to bring about the desired improvements in students of all ages and genders, regarding engagement, wellness and physical activity levels.

Chapter 2: Literature Review

Physical activity (PA) is associated with a range of physical, mental, and social health benefits for children and youth (Colley, 2017). Nonetheless, lifestyle changes, including reduced physical activity opportunities in multiple settings, have resulted in an escalation of obesity and related health problems (Hills et al., 2014). The literature review pertaining to this research focused on three main themes: student engagement, improvement of student activity, and the role of the leader in building a culture of wellness. Today's classroom teachers and school leaders are under new and challenging pressures to meet the objectives of the modern learning environment. Research has demonstrated that increased and sustained levels of physical activity are connected to the reduction of health concerns among children and youth. Children who take part in more physical activity not only have more optimal physical health, but also have better mental health. Recently, attention has been drawn to the relationship between physical health and cognitive health (Hillman, 2014). Further evidence suggests that physically active children outperform their less active peers in the school setting (Castelli, 2015; Hillman, 2014).

The prevalence of obesity among Canadian children and adolescents has increased significantly over the past few decades (Trembley, 2016). The World Health Organization (WHO, 2018) stated that the fundamental cause of obesity and overweightness is an energy imbalance between calories consumed and calories expended (Zahner, 2006), stemming from an inactivity. Surveys conducted in Canada by leading health organizations have shown that a large percentage of young Canadians are not physically active enough to meet the requirements set out by the Canadian Physical Activity Guidelines (2011). Schools are the ideal setting for the promotion of physical activity because all children can be reached through various periods of

structured and unstructured activity (Verstraet et al., 2006). Creating, implementing and evaluating programs to increase participation in physical activity across all ages, cultures, and genders is important for maintaining the relevance of these programs in Alberta schools (Sheehan, 2017).

Regarding the problems contingent upon increasing rates of obesity and inactivity, the research documented in this literature formed the basis on which to answer the research questions and postulate possible solutions to the problems. Review of the literature focused and helped formulate the three underlying themes of this capstone: (a) student engagement and its benefits towards student achievement and success, (b) increasing students' activity levels, and (c) research the role leaders have in building a culture of wellness for all stakeholders. As the research has ascertained, educators and leaders need the support and knowledge to affect the specific changes that need to be implemented to enhance the quality of the educational experience for all stakeholders.

Student Engagement

Engagement occurs when students feel they can interact with content and feel that their lives are touched or mirrored in within it (Warner, 2015). There are a number of negative factors that combine to produce an overall lack of student engagement and participation in physical activities. This mindset often carries over into adult life, resulting in low participation rates in all forms of physical activity. In all aspects of life, student engagement is a key component of success regardless of its basis. Engagement encompasses all aspects of the students' educational experience and has a profound impact on their well-being. This continued engagement is comprised of a number of areas, all of which have an influence on the overall wellness of the stakeholder. Wellness is defined as a "balanced state of emotional, intellectual, physical, and

spiritual well-being that enables students to reach their full potential in the school community” (Government of Alberta, 2009). The components making up student engagement can and will have either a positive or a negative influence on students’ educational experiences. To improve the condition of student engagement, a number of ideologies and circumstances need to be addressed and changed. A growing body of empirical findings demonstrate that a greater amount of physical activity is positively related to scholastic performance (Hillman, 2014). Research results suggest that such activities may have a positive impact on learning and memory; as well, physical activity is associated with the maintenance of cognitive functions (Trudeau, 2008). Academics are not the only area that physical activity influences. Research on engagement focuses on the effect a reduction in PA has on specific aspects of student learning, academic achievement and participation in inclusive PA. The following sections detail the sphere of influence regarding PA, its benefits, and the detriments to children and adolescents if specific areas of engagement are absent.

Issues affecting student engagement.

Reduction of physical activity. The benefits of physical exercise are well documented; however, physical education and physical activity in many public school settings are viewed as an extracurricular activity, thus lending themselves to reductions or elimination from the school day. The lack of physical activity in children and adolescents has become a serious problem in society. More than one-third of children and teens are overweight or obese, with physical inactivity the leading contributor to this epidemic (Troost, 2007). Physical inactivity is a risk factor in developing diseases such as obesity and diabetes (Morales et al., 2011). The systematic reduction and decline in school physical activity contributes to the threat of physical and mental health ailments. In recent years, there have been significant changes in lifestyle practices.

Compounding these changes with reduced opportunities for physical activity, we only exacerbate the potential health risks to children and adolescents. This trend results in insufficient activity levels in children and adolescents, which adversely affect both their physical and mental development. The outcomes of these changes are poor physical and mental health at progressively younger ages; children and adolescents are now presenting with metabolic and cardiovascular problems (Hills, 2014). Physical inactivity has been recognized globally as one of the leading causes of death among children and youth, which exacerbates concerns about the decline in physical activity in their daily regiment. Most adolescents are insufficiently active and this inactivity tracks into adulthood, increasing the risk of diabetes, cancer and mortality (Corder et al., 2015).

Physical inactivity has contributed to an increased risk of many major health problems that are becoming prevalent among children and adolescents. Physical inactivity is also highly prevalent in other developed countries, representing one of today's leading health problems (Belanger et al., 2015; Lubans et al., 2017; Zahner et al., 2006). The high prevalence of physical inactivity in Canadian children and youth is also concerned due to the associated health and economic consequences, particularly as they move into adulthood (Barnes et al., 2016). Physical inactivity refers to the absence of physical activity, while sedentary behavior refers to acts involving very low energy expenditures, during waking hours (Trembley, 2016). Inactivity can lead to an energy imbalance, which means fewer calories expended increasing risk of becoming overweight or obese. A person who is often physically inactive may not be completely sedentary. Conversely, highly active individuals can still engage in high levels of sedentary behaviors, which may lead to various chronic medical conditions.

Similarly, excessive sedentary behavior, especially screen time, is associated with adverse health indicators (Tremblay et al., 2016), cardiovascular disease, high blood pressure and cancers. There is a growing body of research that has acknowledged the health hazards of engaging in too much sedentary behavior (Warburton, 2016). Low levels of physical activity and increased time devoted to sedentary behaviors have been associated with childhood health problems. Sedentary behavior has been receiving an increased amount of attention as a growing health issue, and is associated with obesity, metabolic disease, and physical and psychological health issues, ranging from lowered self-esteem, unfavorable body composition and decreased fitness (Warburton, 2016; Zahner et al., 2006). Sedentary behavior comprises a variety of activities from sitting in a classroom, screen time, riding the bus, and talking on the phone; it may be enhanced by the inability to play outside or by a lack of sufficient physical education being taught in schools. The proliferation of a sedentary lifestyle in children and youth—that is, two or more hours of low activity a day—is associated with the development of weight-related health issues and may replace opportunities to engage in activities that promote scholastic and cognitive development (Martin et al., 2018). In North America, less than one-quarter (24%) of children 6-17 years old participate in 60 minutes of physical activity each day (CDC, 2018), which is the recommended daily amount of physical activity for children and youth. Similarly, research data collected in a Canada-wide survey revealed that children and youth in this country spend 8.6 hours a day, or 62%, of their waking day (Colley et al., 2011; Tremblay et al., 2016) participating in similar sedentary behaviors, such as those listed previously. The current reduction in physical activity by children and youth was emphasized by the Center for Disease Control (2018) statistics that stated that 51.7% of high school students attend physical education classes in an average week, and only 29.9% attend physical education class daily (CDC, 2018).

Over 10 minutes a day of physical activity every year is replaced by sedentary behavior in children and youth, leading to an inactive lifestyle in adulthood (Corder et al., 2015). Decreasing sedentary behavior in children and youth as a goal relies on minimising time spent in sedentary activities; schools are the optimal setting for this type of health promotion because they reach the majority of the target population. Despite the benefits of physical activity, substantially large amounts of young people fail to meet the minimum activity guidelines. This reduction in PA declines even further in the transitional years from childhood to adolescence, being replaced by sedentary activities. High levels of physical activity can attenuate the risks associated with high sedentary behaviors over a prolonged period.

Misconceptions regarding student achievement. Among youth, physical activity is associated with improved cardiovascular health, mental health, and academic performance (Morton, 2015). Academic achievement is primary to all schools. The relationship between academic achievement and physical activity has been under scrutiny in order to determine the validity of the connection. Key to increasing physical activity in schools would be to demonstrate clearly how physical activity might improve academics (Howie, 2012). One of the major obstacles impeding the perceived benefits of physical activity is that schools and administrators reduce or completely eliminate physical education and physical activity time from their program in response to budget concerns or perceived academic benefits (Troost, 2007). There is no clear evidence that reducing physical education time will improve academic achievement (Coe, 2006), and sacrificing physical activity time for additional classroom or academic allotted time does not improve academic performance. The converse can be said, in that students who increased their time spent in school-based physical education were able to maintain or even improve their scores on standardized achievement tests (Troost, 2007).

Students who had increased amounts of time in physical education or school-based physical activity maintained or improved their grades and scores on standardized achievement tests, despite receiving less classroom instructional (Trost, 2006). This demonstrates that a reduction in physical activity time will not adversely affect academic achievement. Physical activities have an impact on cognitive skills, attitudes and behavior, all of which are important components to improve academic performance (CDC, 2010). Increasing the duration of time spent in physical education class, combined with single-session physical activities, results in increased concentration, academic scores, and memory recall. Societal and scholastic trends indicate that students are being active less than previous generations, in conjunction with new governmental policies and mandates. Mandated federal programs, such as *No Child Left Behind Act* (2001) have placed significant emphasis on standardized tests results (Donnelly, 2016). This program has inadvertently lead to the reduction of opportunities to engage in daily physical activities by increasing administrative focus in favour of student and school achievement. If compelling and overwhelming research exists that demonstrates a significant positive relationship between physical fitness and academic performance, most administrators would place more emphasis on student fitness (Wingfield, 2011). Student fitness levels and obesity rates are directly correlated to the decline in physical education and activity time in school. This inactivity results in an increase in obesity, low self-esteem, and ultimately lower academic performance (Pino-Juste, et al., 2016). Proponents of physical activity being an integral aspect of the school day insist on the necessity of school-affiliated physical activity, with benefits contributing to academic performance. The relationship between fitness and cognitive functions have physiological and psychological dimensions, both of which can affect how children respond to external stimuli. Physiologically, physical activity stimulates and enhances circulation,

increases blood flow to the brain, resulting in elevated levels of norepinephrine and endorphins (Wingfield, 2011). Psychologically, a lack of physical activity and fitness are often associated with negative perceptions of body image and athletic ability. A poor self-image in any domain may lead to a poor academic self-image as well. Herein, “studies have found positive associations between classroom-based physical activity and indicators of cognitive skills, attitudes and academic achievement” (CDC, 2010). Activities that are vigorous in nature are more likely to increase academic achievement than moderate level activities (Coe, 2006). Increasing the physical activity allocation throughout the day potentially increases both student participation and levels of physical fitness, both of which lead to improved academic performance, brain function, attention spans and memory retention (Castelli, 2015). Increasing physical education or school-based activities without risking a reduction in academic progress allows students to engage more often in meaningful classroom learning. Physical activity interventions reduce disruptive behavior at school and limits off-task behaviors in classroom settings (Trudeau, 2008). Increasing the duration of physical education has positive implications, allowing students to engage in activities, and producing significantly higher levels of physical fitness and well-being. As such, “Physical activity can be added to the school curriculum by taking time from other subjects without risk of hindering student achievement, conversely adding time to ‘academic’ or ‘curricular’ subjects by reducing physical education programs does not enhance academic achievement” (Trudeau, 2008 p. 1). Physical activity is positively related to academic performance. There is evidence that there could be an optimal amount of physical activity for the best academic performance (Morales, 2011). Regular participation by children and adolescents in physical activity results in higher levels of fitness,

which is linked to improved academic performance, brain function, concentration, and on-task behavior (Castelli, 2015).

Information gathered from the research on the relationship between physical activity and education and their effect on inclusive education and academic performance, has shown the correlation between daily physical activity and academic achievement. Even with all the research and data to corroborate the benefits of school-based activity, some administrators and school districts continue reducing activity time in favor of curricular time, in an effort to raise test results. Research suggesting physical activity improves academic performance has been studied for many years. With the onset of serious health issues associated with school-aged students, the need for consistent physical activity has become more prevalent. The inactivity and reduction of physical education and physical activity time has renewed the emphasis being put on finding the correlation between physical activity and academic achievement. Student's social-emotional well-being needs to be examined closely as it relates to body image, self-esteem, and academic performance.

Improving Physical Activity Levels and Engagement

A growing body of evidence indicates that physical activity in childhood is essential for healthy brain development—, which continues into adolescence when continued involvement in physical activity occurs. Participating in physical activity (PA) in the developmental years leads to improvements in a significant number of physiological and psychological areas, ranging from emotional regulation and self-control to the ability to cope with anxiety and to improve self-esteem and self-worth (Barenes, 2018). Physical education and physical activity implementations have varied across Canada in recent years, with the majority of schools adopting various PA prescriptive, additional physical education (PE), scheduling daily physical

activity (DPA) into timetable, integrating DPA into other curriculum subjects, and taking multiple smaller breaks throughout the school timetable. Some schools have taken further initiatives such as using non-prescriptive approaches, intramurals, lunch hour games, and open access to facilities and equipment to enhance the student engagement in PA. Engagement occurs when students feel they can successfully accomplish the physical activities in which they are participating. If there is a lack of student engagement, reduced levels of participation in PA could result in later life. Physical education programs are expected to foster lifetime active behaviors conducive to healthy choices and lifestyles. Facilitating student levels of motivation in PE and PA has been associated with numerous positive student outcomes. These outcomes include greater levels of PA during class and higher levels of engagement in PA during recreational time, ultimately resulting in higher levels of enjoyment and fulfillment.

Physical activity and brain function. Cognitive functions can be defined as “mental processes that contribute to perception, memory, intellect, and action, provides a core foundation of mental health” (Lubons, 2016 p. 2). As previously stated, physical inactivity and inactive lifestyles are detrimental to the health and well-being of children and youth. The development of the brain occurs in stages with rapid growth occurring during childhood and adolescence. The formation of a heightened self-concept and the establishment of behavioral patterns characterize this development. During this period of development, physical activities lead to improvements in mental health and cognition. There is a growing body of empirical findings that demonstrates that a greater amount of physical activity is positively related to greater cognitive and scholastic performance (Hillman, 2016). Physical activity does not only positively influence physiological factors, but also positively influences the psychological domain (Zahner, 2006).

Psychologically, regular physical activity has been shown to increase children and youths’ ability

to cope with stress, improve their quality of well-being, and enhance their mitigation of anxiety and depressive symptoms. In conjunction with the all the individual benefits of physical activity, PA also enhances social dynamics, particularly in the school setting. Improvements are notable in school climate, social competence, and on-task classroom behavior, all of which influence and enhance student cognitive development. Research provides evidence that “increasing physical activity opportunities in the classroom improved on-task behavior to a greater extent for children who demonstrated poor on-task behavior” (Drollette, 2013 p. 60; Mahar, 2006).

A child’s overall physical activity is linked to their physical and mental health, maintenance of a healthy body weight, academic performance and motor skill development (ParticipAction, 2018). Research studies have found that PA, specifically moderate to vigorous intensity physical activity (MVPA), and DPA were associated with motor and cognitive development, increasing development of the student’s language and executive functioning and enhancing their gross motor skills. The benefits of PA have long been associated with body and heart health; however, one major benefit of physical activity that has been overlooked is the effect it has on brain health. Growing evidence indicates that PA in childhood is essential for healthy brains and leads to numerous benefits specifically related to brain development. These benefits encompass all aspects of a person's make-up: physical, mental and psychosocial, leading to improvements in thinking and learning, emotional regulation, brain plasticity, coping mechanisms, self-esteem and self-worth (ParticipACTION, 2018). When more physical activity is added into a student’s routine, successes in the classroom are evident, allowing for positive feedback from all stakeholders. Students who have bouts of exercise before a cognitive assessment, regardless of intensity, have stronger brain functions. Specifically, “sections of the brain dedicated to memory and learning; the hippocampus and basal ganglia, are larger in active

students in comparison to their less active peers” (ParticipACTION, 2018). Physical activity is an effective tool for mitigating social and academic stressors faced by students; moreover, a healthy brain is one of the greatest resources these students possess. To acquire and maintain healthy brain function, all students should be physically active on a regular basis. Regular bouts of physical activity are beneficial to brain development and play an integral role in the development of its thought and behavioral processes, potentially influencing how the brain is structured. Physical activity improves students’ ability to meet academic expectations. When PA is at a constant or increasing level of intensity, the results in academic performance, concentration and focus also improve substantially. Additional benefits of physical activity surround the increased effect on both convergent and divergent thinking, which leads to improvements in creative problem solving and decision-making (Colzato, 2013; ParticipACTION, 2018).

Physical activity and mental health are inordinately connected. PA can help support positive mental health and overall wellbeing, particularly in youth. Depression and anxiety are two areas that can be minimized or curtailed through regular bouts or interventions of physical activity. Long-term participation in physical activity helps with the release of neurotransmitters, serotonin and dopamine, leading to improvements in the emotional health of children and youth (Lee, 2015; ParticipACTION, 2018). Research indicates that physical activity plays a vital role in the reduction of the symptoms of depression and other stress-related mental issues. Physical activity can help children and adolescents cope with low self-esteem and low self-worth by promoting positive emotions and encouraging mental and emotional wellness with very little harmful effects.

Increasing physical activity. Throughout the day, physical activity can be accomplished

by numerous daily undertakings by children and youth. Physical activity can manifest itself in a variety of ways: active play, formal play, and free-style play, all of which embody the philosophy of increasing the daily activity levels of children and youth. Researchers have formulated a working definition of what active play encompasses stating that it consists of “a form of gross motor or total body movement in which young children exert energy in a freely chosen, fun, and unstructured manner” (Truelove, 2017 p. 162). Increasing physical activity during the school day has become a concern, and some innovative approaches have been implemented in conjunction with new or revised daily physical activity (DPA) initiatives.

Recess. Recess is a relatively easy and low cost way to help students be physically active. Recess is defined as a regularly scheduled period(s) within the school day for physical activity and play that is monitored (CDC, 2017). Physical activity breaks, or recess, are an opportunity for children and youth to engage in free-play or semi-structured physical activity during the school day. This time also allows students the opportunity to apply skills learned in structured athletic instructional time. Recess provides students time to engage in regular unstructured activities of their choice while promoting social, emotional, and academic benefits. As stated by the Centers for Disease Control and Prevention (CDC, 2013), these benefits are: increased attentiveness, concentration, behavior, and time-on-task in the classroom.

Recess can be implemented at all levels of education, employing different strategies at each of those levels. Elementary school recess interventions can consist of basic activities that allow students to expend significant amounts of energy in free-play activities. Middle and high school level physical activity breaks, or “recesses,” can be structured and scheduled using a number of unique methods. These interventions can occur during class transitions, enrichment blocks, and homeroom classes (CDC, 2013). The integration of physical activity periods in a

creative manner allows students to connect with their peers and instructors, fostering greater connectedness to the school environment. Research has shown the benefits of recess have a significant impact on students during the school day. Accordingly, “Students who are physically active tend to have better grades, school attendance, classroom behaviors and cognitive performance” (CDC, 2017) in schools that offer physical activity in the form of recess and the opportunity for free or unstructured play. The underlying benefits of recess, regardless of grade or institutional level, range from increased participation in physical activities to improved socio-emotional development. These benefits and opportunities are of particular importance for students with special needs, functional limitations, or physical disabilities. When implemented properly, recess not only helps improve the physical aspect of students’ development, but it can also reduce bullying and exclusionary behavior and create a positive school climate (CDC, 2017). Periodic breaks given to students from classroom instruction allow these students time to free-play, resulting in reduced stress levels, increased socialization, and refinement of their social skills (McNamara, 2018). Recess can be a huge proponent of creating an environment that is conducive to health promotion. This promotion involves creating supportive environments to optimize physical, mental, and social well-being (McNamara, 2015). Students also need to be encouraged to create fun activities on their own. In accomplishing this, students learn how to develop friendships and interact with others in a positive manner (Stanton, 2013). Recess is a necessary break in the routine of the students’ day. These breaks optimize students social, emotional, physical and cognitive well-being and development. The duration and frequencies of the break should be such to allow students to mentally decompress (Ramstetter, 2017). The interaction that occurs at recess allows students time for communication, cooperation, and problem solving, all of which complement the students’ classroom experiences. The importance

of recess can not be overstated, and because of its importance as a child's personal time, should not be used or mitigated as an instrument to improve academics or for punitive reasons to illicit a desired behavior. Research on the benefits of recess and unstructured time has shown that they serve a critical role in schools as a necessary break from the classroom environment. Recess needs to be a complement, not a replacement, for physical education; both promote active healthy lifestyles (Ramstetter, 2010).

Brain breaks. Weslake (2015) states that "Brain breaks facilitate opportunities for students to breathe, relax, recharge and refocus" (p. 39). Classroom physical activity breaks are a strategic opportunity to promote physical activity during the school day; these breaks limit sedentary time, thereby increasing students' academic achievement. Further, "Brain breaks are simple transitional physical and mental exercises designed to equip teachers with tools to manage the physiology and attention of the class and keep students in a receptive state for learning" (p. 39). Current trends in educational research dealing with brain development state the importance of frequent downtime or cognitive breaks to optimize the learning processes. Classroom physical activity is any activity done during regular instructional time in which students expend energy engaging in non-traditional physical activities, over several brief time periods (CDC, 2019). These physical activities are integrated into a students' core instructional time, allowing the students to refocus on classroom domains. The implementation of classroom breaks needs to be in addition to time spent in regular physical education class or in unstructured recess time allotments. The benefits of classroom activity breaks are similar to those of other DPA or MVPA, ranging from increased concentration, increased on-task behavior, greater engagement in their learning processes, and ultimately increasing the students overall physical activity amounts (CDC, 2019). Classroom physical activity helps students appreciate and enjoy

being physically active. Regular classroom physical activity has the potential to improve mental health by reducing stress and increasing self-esteem (CDC, 2018; Weslake, 2015). Research demonstrates that having students engage in classroom activity breaks throughout the school day decreases off-task behavior by twenty percent (Troost, 2007). Classroom activity breaks consisting of 5-20 minutes (CDC, 2010), depending on class length, develop areas of student learning not traditionally associated with physical activity, and have a positive impact on academic achievement and on cognitive skill development. Single-session physical activity studies have shown that “immediately after just one session of physical activity, children can increase their attention and memory and potentially reduce inappropriate behavior” (Castelli, 2015 p. 3).

Evidence exists that engaging students in physical activity breaks during their regular classes positively impacts cognitive growth. This evidence emphasizes the importance of activity breaks in the development of the students’ physical and emotional involvement in their own learning and growth. As such, “Neuroscience tells us that the brain shifts its attention and focus every 90 minutes, even short breaks from focused concentration allow the brain to consolidate information for better retention and retrieval” (CDC, 2013). Most learners can concentrate for approximately their age plus or minus two minutes, hence demonstrating the developmental and practical utility of brain breaks during classroom periods (Weslake, 2015). In conjunction with physical education, recess and classroom activity breaks provide students opportunities during the school day to engage in non-structured activities that are beneficial to physical and cognitive growth (CDC, 2018). Research around brain breaks and their associated benefits has also shown that students with special needs, including ADHD (attention deficit hyperactivity disorder), benefit from brain breaks or downtime to the same degree as traditionally-educated students.

Typically, there are three variations of a brain break, namely: breathing based activities, vigorous physical activities, and mentally based activities (Weslake, 2015). Each of these interventions will have specific effect on students if implemented during class time. Breathing exercises utilize not only specific breathing techniques, but also use visualization to increase focus and student well-being. Physical brain breaks generally incorporate a vigorous physical component designed to alleviate stress, improve fitness and develop fine motor skills. Mental brain breaks utilize methods to improve focus and mood, usually incorporating learning games designed to stimulate and engage the entire student.

Classroom activity breaks. As mentioned, “brain breaks facilitate opportunities for students to breathe, relax, recharge and refocus (Weslake, 2015). Classroom physical activity breaks are a strategic opportunity to promote physical activity during the school day and limit sedentary time, thereby potentially increasing academic achievement. To this end, “Brain breaks are simple transitional physical and mental exercises designed to equip teachers with tools to manage the physiology and attention of the class and keep students in a receptive state for learning” (Weslake, 2015 p. 39). Current trends in educational research dealing with brain development state the importance of frequent downtime or cognitive breaks to optimize the learning processes. Classroom physical activity is any activity done during regular instructional time in which students expend energy engaging in non-traditional physical activities over several brief time periods (CDC, 2019). These physical activities are integrated into a student’s core instructional time, allowing the students to refocus on classroom domains. The implementation of classroom breaks needs to be in addition to time spent in regular physical education class or unstructured recess time allotments. The benefits of classroom activity breaks are similar to those of other DPA or MVPA, ranging from increased concentration, increased on-task behavior,

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Engaging students in physical activity breaks during their regular class's positivity impacts cognitive growth. This evidence emphasises the importance of activity breaks in terms of students' physical and emotional involvement in their own learning. Accordingly,

Inclusive physical activities and education. Essentially, "Inclusion is not bringing people into what already exists; it is making a new space, a better space for everyone" (Dei, 2006). Inclusive schools are a place where all students have a sense of belonging, are accepted, are supported by the entire school community and all stakeholders, while their educational needs are met. Inclusive physical education and physical activities encompass a wide range of categories and endeavors. Alberta Education (2015) has a definitive policy on inclusion in educational programs offered at all schools at the provincial level: "All children and students regardless of race, religious belief, color, gender expression . . . physical disability . . . have access to meaningful and relevant learning experiences that include appropriate instructional supports" (Alberta Education, 2015a). In Alberta, inclusive education and inclusive physical activity

programming are a way of thinking and demonstrating universal acceptance of, and belonging for, all students, and of accepting responsibility for all students, giving them an equitable opportunity to be included in the learning environment of their choice (Alberta Government, 2013). These policies ensure that all students will be educated to the level of educational expertise they are entitled to receive. To ensure all students will receive this level of education, Alberta Education has implemented a new Teacher Quality Standard (TQS, 2019), and Leadership Quality Standard (LQS 2019). These two documents outline specific requirements all teachers and leaders must adhere to and implement for all students. In the fourth standard (Establishing Inclusive Learning Environments), the TQS (2019) states, “a teacher establishes, promotes and sustains inclusive learning environments where diversity is embraced and every student is welcomed, cared for, respected and safe” (Alberta Education, 2019). Taking part in daily physical activity is a vital part of development for all youth. Participation in all types of physical activities develops physical literacy skills, which enable students to move with competence and confidence when engaged in a variety of activities or specific sports skills. Inclusive physical activity also embodies and embraces all aspects associated with the internal and external environments that students are exposed to, regardless of what the activity is or where it is implemented, all students are given the opportunity to succeed in physical activity engagement.

Inclusive physical activity environments allow students the opportunity to participate in activities at their own pace and ability level, such that each is not necessarily participating in the same activities as their peers. Activity environments can be located in green spaces and other natural venues. Green spaces are often settings that directly facilitate exercise; incorporating these spaces into daily physical activity sessions can incidentally entail walking, running, or

cycling. If these spaces contain vegetation offering shade, greater promotion of physical activity is likely to result through improved body functions and temperature regulation, which then enable increased effort and duration in that activity (Shanahan, 2016).

Outdoor play creates a learning environment that fosters curiosity and investigation (Sobchuk, 2019). These types of physical activities are a basic need for all children and youth, allowing them to take risks in the activities they choose to participate in on a daily basis. The importance of outdoor play has been shown to improve well-being, resilience, and self-confidence, while allowing participants to assess the risk factor(s) of the activity and keep all participants safe (ParticipACTION, 2015; Shaw, 2015). Outdoor play is comprised of any number of activities that have their own set of risk factors and allow children to develop cognitive and social outcomes and improve attention and self-regulation (Sobchuk, 2019). The characteristics of the activity that necessitate children's participation make their significance clear; accordingly, it has to be fun, pleasurable, offer choice, and children must have the freedom to participate in any or all the activities. If these qualities are not present or have been reduced, the activity may no longer be considered play, which can influence the child's interest or overall engagement (Herrington, 2015). Outdoor play is not determined by the risk factor of the activity; it is based on whether the activity is exciting and thrilling and whether students are allowed to test their abilities and limits. Research indicates that children are more physically active when they play outside. The positive effects of time spent in outdoor physical activities can have a significant impact on children's overall fitness (Herrington, 2015). Evidence indicates that natural play spaces and their elements can increase affordance for specific types of "play" (Herrington, 2015; Sobchuk, 2019). Outdoor play with nature-based affordance increases

engagement amongst children and youth; these outdoor environments further allow for unobstructed access to play, which challenges their abilities.

Active play and non-structured play benefit from implementation in similar locations with similar outcomes and results. Unstructured play can occur in any location, is spontaneous in nature, is organized by the children and youth, is of interest to the participants, and has been shown to be crucial to their overall development. Unstructured play develops childrens' resilience, allowing them to manage their emotions while facing challenges associated with the specific play environment, ultimately allowing them to reach their full potential mentally and physically (Sobchuk, 2019). When active play and physical activity cease, it is rarely due to the nature of the specific activity; it is, however, often due to to the activity becoming too serious, too passive, too frustrating, or because the students feel too obligated to participate (Herrington, 2015; ParticipACTION, 2018). UNESCO (2015) states, "Inclusive quality physical education is a platform for inclusion in wider society, particularly in terms of challenging stigma and overcoming stereotypes" (Jacula, 2019, p. 45). Inclusion in physical activities provides students of all abilities (able-bodied and those with disabilities) the opportunity to socialize and to develop fundamental and cognitive skills, all the while teaching students tolerance and respect (Sobchuk, 2019). Inclusion cannot resonate within a learning environment without implementing the following strategies: a student-centered approach, cooperative learning opportunities, and use of differentiated instruction and various teaching styles to facilitate inclusive physical education (Griggs, 2015; Jacula, 2019). Activities that require teamwork to achieve specific goals rely on positive interaction and positive interdependence for success. Maximizing the potential benefits of physical education and physical activities for students has been shown to increase their quality of life into their adulthoods (Pino-Juste, 2016).

Role of the Leader in Building a Culture of Wellness

Educational leadership is possibly the most important single determinant of an effective learning environment, alongside a strong climate of expectations and effective communication (Kelley, 2005). Effective school leadership is essential to improving the efficiency and equality of the learning environment for all stakeholders. Instructional and administrative leadership are foundational to the development and implementation of policies and programs, which can affect change in a school environment. School leadership has become a priority in education; it plays a key role in improving scholastic outcomes by influencing the motivation and capacities of teachers (Pont, 2008). In an educational setting, leaders have the potential to make substantial differences in the school culture, climate, and overall wellness to impact student performance. School leadership's responsibilities should be defined through an understanding of the practices that have the greatest impact on teachers and student learning (Wilson, 2011). Research suggests the presence or absence of a strong educational leader, the climate of the school, and the attitudes of the teaching staff can directly influence student achievement (Kelley, 2005). Effective instructional and administrative leadership is an essential component required for the implementation of any changes needed to an educational environment. These leaders will initiate instructional programs in an attempt to foster a school culture that is conducive to student learning, professional growth and the wellbeing of all stakeholders.

School leadership: principals. Principals have the power, authority, and position to impact the climate of the schools, and to develop a feeling of trust, communication and collegiality within the confines of the learning environment (Kelley, 2005). The role of

principals is a combination of leadership styles and compliance to divisional and governmental directives, which enable all students to be successful in all aspects of their education. Kouzes and Posner (2003) outline five practices of exemplary leadership that principals can incorporate into their own leadership style. Effective principals or leaders will use these practices to build credibility, which is the foundation of their leadership abilities. These practices model the way, inspire a shared vision, enable others to act, challenge the process and encourage the heart (Kouzes, 2003), all of which are crucial in the development of each leader's unique style. It is important to model the behavior you expect others to follow, to clarify your values and to identify the foundational values of the school and stakeholders (Kouzes, 2003). In conjunction with these leadership practices, principals need to be impactful in their implementation of policies or new programs in all subject areas (including physical education and physical activities) to develop an atmosphere of collaboration within the school environment. In order to create collaborative learning environments that benefit students and teachers, principals must arrange the teachers into effective teams for effective collaboration. Marzano et al. (2005) refer to this as "input" or the extent to which teachers are involved in leadership within their school (Balyer, 2015). These initiatives result in the formation of collaborative or professional learning communities that allow teachers to utilize the benefits of collegial insight and capacity.

The landscape of education is constantly evolving, so principals have a responsibility to all stakeholders to ensure that the quality of education at their school(s) is equitable for everyone. Inclusion is a way of thinking and acting that is conducive to an acceptance of all students regardless of religious belief, ethnicity, gender or gender expression, among other characteristics (Alberta Government, 2017). Inclusivity is an integral part of a leader's educational philosophy, vision and mission for his or her school. The principal's role is to lead teachers toward

improvement while learning alongside them, analyzing whether programs do or do not work (Fullen, 2014, p. 35). One of the hallmarks of effective principals is how they treat people. Effective principals treat people with respect in all situations (Whitaker, 2003). As stated earlier, the responsibility of principals is the establishment of goals; clear mission statements underline the focus of the school in an effort to establish “a safe environment for teachers to critique, question and support both students and fellow educators” (Fullen, 2014, p. 85; Hattie, 2009, p. 83). Effective leaders have the ability to ensure all students receive the education they are entitled to. These leaders have an in-depth knowledge and understanding of what is needed to ensure all aspects of the new Teacher Quality Standard or TQS (Alberta Government, 2019) and Leadership Quality Standard Standard or LQS (Alberta Government, 2019) are implemented. These two documents outline the ways that teachers and principals are held accountable for the administration of all required educational programmes. The LQS (2019) outlines nine standards for principals that need to be accomplished to enable all stakeholders to be confident in the education system. Inclusion by all stakeholders in the educational process is one of the underlying themes of this document. Standards three, five, and six, namely: embodying visionary leadership, supporting the application of foundational knowledge about First Nations, Métis and Inuit, providing instructional leadership (Alberta Government, 2019), all focus on the inclusion. Once this initial framework has been established and principals have gained the confidence of their colleagues to challenge the status quo regarding educational programs, the implementation of new challenging programs affecting all subject areas can proceed. Challenging the status quo is the willingness and the ability to question common practices, take risks, innovate, and have a clear focus on the end result (Fullen, 2014, p. 129). This willingness

becomes evident in the development of school culture, physical education and daily physical activity initiatives.

Leadership plays an integral role in building positive school culture. Stepping into a school, its culture is immediately evident and is a major indication of the efficiency of that school (Smith, 2016). Optimal student learning is a critical component of school culture, which all leaders and teachers are a crucial component in the development of its benefits within the school environment. Leaders of these schools place high expectations on both students and teachers to set goals conducive to the characteristics of the school culture. The education system is constantly changing with the development and implementation of new programs and policies. The principals of these schools understand the importance of change to facilitate a positive school culture. In order to find better ways to accomplish these changes, transformational leaders continually challenge their staff to change the status quo and to find new alternatives for student engagement and success (Smith, 2016). Further to this, professional development opportunities should be offered for leaders to increase their knowledge and understanding of their role through the collaboration time with colleagues or other venues allowing for continued improvement in their practice (Smith, 2016). In order for principals to maximize their influence on student learning, their role must be reconceptualised to practically and convincingly show it has become a force for improving whole school results (Fullen, 2014, p. 6).

Department leads. Teachers in the area of physical education identify with three key leadership components needed to implement programs associated with PE and PA. Leaders in PE and PA continually apply relevant knowledge, solve complex problems and build trust in team members. Outstanding leaders in PE and PA wonder how to get better results, seek innovative ideas from team members, take responsibility for programs that are unsuccessful and

look for ways to improve outcomes (Fullen, 2014, p. 133). Principals have the LQS (2019) as their guiding principles for proper implementation and assessment of all programs and personnel within the educational environment. Similarly, PE and PA teachers have the Teaching Quality Standard (TQS, 2019) as guidelines to apply pedagogical knowledge for optimal student learning (Alberta Government, 2018). Successful schools and their teachers adhere to all the TQS (2019) standards, notwithstanding PE and PA leaders who embody all of the standards, with a requisite focus on: fostering effective relationships, establishing inclusive environments, and applying foundational knowledge about First Nations, Métis, and Inuit (Alberta Government, 2019). Empowering staff to be agents of change, specifically PE and PA leaders, has a powerful effect on school culture (Smith, 2016). In order to engage and develop a culture of inclusion, it is essential for program leaders to develop dynamic and effective instructional programmes to ensure student success.

Physical education teachers encompass not only subject matter, but also the collegiality associated with the administering of the course content. Inclusion cannot resonate in a class without the program being student-centered, having cooperative learning opportunities, using differentiated instruction ideals, and implementing various teaching styles to facilitate inclusion in all aspects of physical education (Jacula, 2018). The benefits of inclusive programming are only as positive as their instructors. Teaching attitudes are tremendously influential towards the amount of engagement and enjoyment that students experience. Positive attitudes towards physical education, its content, and the students, have the potential to be the greatest influence on student participation (Jacula, 2018). Inclusion is not limited to the students; PE and PA leaders' physical involvement in the activities bolsters a sense of enthusiasm and participation within the students. Exceptional inclusive physical education teachers are those who exude a positive

attitude towards the subject and are thoughtful, considerate, fair and willing to have a laugh (Fitzgerald, 2005; Jacula, 2018, p. 42).

Summary

Chapter 2 dealt with the research pertaining to current issues in physical education and the state of physical activity in the educational system. The literature review indicated that there were areas of significant concern in regards to current levels of physical activity, physical education, and overall physical and mental health in Canadian children and youth. One of the overwhelming concerns is the tremendous increase in the level of inactivity among that specific population dynamic. Physical inactivity refers to the absence of physical activity, while the presence of sedentary behavior denotes low energy expenditure. Both of these conditions have influenced how physical education and physical activity programs have been, or need to be, administered, and by whom. There are numerous policies and initiatives aimed to improve academic results; unfortunately, PE and PA time allocation are often reduced or eliminated to comply with the demands of these initiatives. One of the recurring themes in the literature review was that increasing physical education or school-based activities did not facilitate a reduction in academic progress; moreover, it allowed students to engage more often and meaningfully in classroom learning. The review further established the benefits of regular PE and PA; herein, Morton (2015) stated that physical activity in youth is associated with improved cardiovascular health, mental health and academic performance. Physical activity positively influences physiological factors and also positively influences the psychological domain (Zahner, 2006).

Chapter 2 also dealt with the importance of appropriate leadership in all levels of the educational environment and for all stakeholders. School principals have the ability and the

authority to influence the climate of the entire school environment. Principals play an integral role in building a positive school culture. Leadership is not only associated with the principal; teachers often inherit the role of a leader in specific programmes. The importance of PE and PA leaders is the establishment and development of outstanding programmes that encompass and include all students as outlined in the new Teaching and Leadership Quality Standard (2019), regardless of their age, gender, ethnicity, or gender identification. Inclusive schools are a place where all students have a sense of belonging.

Outline for the Remainder of the paper

Throughout chapter 2, the research detailed an escalating trend of inactivity and sedentary behavior that is enveloping children and youth. This trend has been coupled with a reduction in physical education time and programming, which together have exponentially deterred students' cardiovascular and mental health. Further, research indicates that in order for change to occur at all levels of education, these changes must be initiated by principals and other leadership. Each principal must assume a clear role in this endeavor. Each is responsible for establishing challenging goals within safe and inclusive environments for all stakeholders (Hattie, 2009).

Chapter 3 is a review of the conclusions based on the research, which provides recommendations on how to facilitate the implementation and improvement of environments that enhance physical education and physical activity programs. Through interventions designed to bolster students' engagement, inclusion, curiosity, and overall student wellbeing will be enhanced. Chapter 3 will also include recommendations and implications for future areas of research.

Chapter 3: Summary, Recommendations, Conclusion

Summary

Research conducted for this capstone focused on programs, policies and initiatives that could be implemented to increase physical education and physical activity interventions to ultimately promote physical, emotional, and cognitive growth among children and adolescents. The pandemic of inactivity among children and adolescents threatens their physical and cognitive health (Hillman, 2014), as iterated in the research. Compounding the escalation of student inactivity is the reduction or elimination of physical education and physical activity programs within the educational setting in favour of academic achievement. An increase in physical inactivity results in an escalation of sedentary behavior, leading to the reduction of energy expenditure, and ultimately causing an alarming increase in obesity rates among young people in developed countries (Hills, 2014; Pate, 2016; Trembley, 2016).

Further review of the literature reveals the development of numerous programs and initiatives to be implemented within the structure of the educational environment. When implemented, these strategies would benefit students in numerous capacities. The purpose of the literature review was to identify existing trends in the implementation of physical education initiatives. The literature review was centered on the acquisition of information pertaining to the two questions that were postulated at the outset of the project:

(1) What are some of the indications physical activity contributes to the development of culture and wellness in an educational environment?

(2) What is the role of leadership in the development of a school culture that values wellness?

Examining the current research pertaining to these questions, I generated recommendations that, if implemented, could potentially influence how strategies and initiatives in physical education and physical activity are administered and disseminated into the structure and culture of the educational environment. Implementing these recommendations could make significant improvements to engagement and participation by all stakeholders.

Recommendations

Reduction of physical inactivity. Student engagement is directly associated with their ability to participate in either structured or unstructured physical activity throughout a typical school day. Conversely, the inability of students to participate in daily physical activity results in an increase in sedentary behavior and inactivity long-term. According to Trost (2007), sedentary behavior and inactivity are the main contributing factors contributing to the current health and fitness epidemic facing children and youth, which is inherent in to the increase in obesity rates. In order to alleviate the results of this epidemic, a lifestyle shift needs to occur starting with changes towards daily physical activity. Part of this lifestyle shift involves implementing these changes to an education setting. Changing these health behaviors can benefit cognitive function and school achievement (Martin, 2018).

Increasing physical activity within the confines of the school environment needs to be a concerted effort by all stakeholders. In order to increase daily physical activity at all levels of education, the current DPA policy needs to be revised and strengthened. Time allocated in PE and PA should aim to meet the daily recommendations for young people. Physical activity is associated with health benefits, particularly in young people; the greater the physical activity level, the greater the health benefits. The results of these physical activity bouts should be an

accumulation of 60 minutes of MVPA each day (Colley, 2011). Revamping others' mindsets around physical activity will require the implementation of any number of recommendations.

Physical education is embedded within curriculum outcomes. Resultantly, the implementation of any curricular change to daily physical activity will be predominantly governmentally prescribed. Physical education and physical activity need to be recognized as beneficial for cognitive and mental health (ParticipACTION, 2018). When these health and mental benefits are accepted, program development at a curricular level can commence, beginning with the continued creation of policies that encourage or mandate physical activity time during school, the development of inclusive programming, and the allocation of funds for the specific training necessary for the implementation of these programmes (ParticipACTION, 2018). These focuses will help educators be informed about adaptations or modifications to the physical education program. Enhancing inclusion will culminate in personalized physical activity programmes, which will prompt scholastic success for typically developing children and children with disabilities alike (Howie, 2012).

Increasing physical activity.

Implementing unstructured activity time. As stated in chapter 2, a growing body of evidence indicates that physical activity in childhood and adolescence is essential for healthy brain development. These bouts of physical activity need to occur throughout the school day, largely due to the fact children and youth spend the majority of their waking day in a school environment (McMullen, 2015). These physical activity breaks or bouts offer the students' time to reduce their stress levels, re-focus their thought processes and re-energize their bodies (Weslake, 2015). Implementing these bouts of unstructured physical activity can take the form of a vast array of activities that encompass both physical and mental domains. The greater the

amount of physical activity, the greater the cognitive and scholastic performance (Hillman, 2016).

Recommendations to increase the level of physical activity administered to children and youth are diverse; each recommendation is based on the parameters of DPA initiatives. These interventions can be adapted to fulfill the physical and mental needs of children and youth throughout their entire school careers. The first of these interventions is the integration or reintegration of an unstructured recess period that allows students to be released from the classrooms and encouraged to partake in activities of their choice (Ramstetter, 2017). School time allocated to PE is limited, and recess can be scheduled for multiple time periods throughout the entire day, which makes this intervention crucial (Verstraete, 2006). Beyond the obvious benefit of increasing the amount of PA students receive during the day, recess improves cognitive functions, thus allowing students to maintain accepted classroom behaviors for longer periods of time. The unstructured time offered by recess hosts socio-emotional benefits and allows students time for peer interaction and for the development of communication and cooperative skills, which can, in turn, enhance the culture of the school. It is also critical that the allocation of recess time is utilized for unstructured physical activities where children and youth can benefit from free play; recess should not be utilized for required physical education minutes.

In conjunction with the integration of recess minutes, outdoor play and free play are components that could be implemented in the school day as well. The current problem is that North American children only spend on average four to seven minutes per day in unstructured play conditions (Sobchuk, 2019). Implementing an outdoor play initiative would expose students to natural elements and to certain aspects of risk. The positive outcomes associated with outdoor play contribute to the healthy development of the students, and would overshadow any

potential risk factors, assuming the outdoor environment is constructed according to proper parameters. Nature play results in an increase in motivation, improved concentration, confidence and development of motor skills to accentuate the acquisition of knowledge about nature. Outdoor play creates a learning environment that is conducive to the fostering of curiosity, investigation, and the promotion of movement in all spatial planes (Sobchuk, 2019). When students are outside and active, they will move more, conduct fewer sedentary behaviors, and are engaged in physical activities longer. When developing these spaces, it is essential to construct them in such a manner to facilitate the use of diverse materials and obstacles, in order to support the investigative play that could potentially occur. Natural elements provide these specific affordances, allowing for increased engagement with the environment, which results in a decrease in boredom and sedentary behaviors (Herrington, 2015). The positive association between outdoor time and physical activity focuses its primary outcome on ensuring that adequate outdoor play opportunities exist for all students in a variety of settings.

Leaderships' role.

Implementation of inclusive school initiatives.

Research indicates that school principals play a critical role in providing direction and support toward the development of a culture of wellness. Good leadership is a key component in the implementation of initiatives and projects to affect change, and is also essential to enable others to build their teaching capacity to administer such changes (Roberts, 2016). The role of leadership personnel is paramount in establishing the culture and climate of the school environment if changes are to benefit all stakeholders. Ultimately, it is this relationship that shapes the culture and climate as much as it is influenced by school leadership personnel alone (MacNeil, 2009). The principles' role is to lead teachers in the process of learning to improve

their effectiveness, while learning alongside them (Fullen, 2014, p. 55). Further, teachers' and principals' individual and collective efforts are essential in order to improve students learning through their ongoing skill development and their contributing to a positive school environment (Balyer, 2015).

Principals and teachers need to actively collaborate around curriculum and instruction in order to be successful in implementing programs. This shared instructional leadership calls for leaders to act as less of an evaluator of teacher practice and more like a facilitator of teacher growth (Hitt, 2016). This interconnectedness between leadership, principals, and their staff is crucial in the development and implementation of recommendations that have the potential to enhance the quality of the physical education, physical activity, and wellness initiatives. The interconnection between principals, teachers and students results in improved inclusion in all aspects of students' school experiences. In Alberta, inclusive education is a way of thinking and acting that demonstrates universal acceptance and belonging of all students (Alberta Government, 2013, p. 5; Alberta Government, 2016, p. 9). All stakeholders must take responsibility for its implementation. Principals and teachers are mandated by the new LQS (2019) and TQS (2019) to implement all the standards, of which an inclusive educational environment is an integral part of all students' educational rights.

Principals and teachers have a responsibility to their students to cultivate learning environments that are accepting, resilient and cohesive. Creating this environment is vital to overcoming learning obstacles in schools (Jacula, 2018). The implementation of inclusive education and wellness protocols can be accomplished through various health initiatives; one such initiative is the Comprehensive School Health program. Comprehensive School Health warrants exploration in greater detail by educational districts, with more likely health

implementations as a result. Further, “Comprehensive School Health (CSH) is an internationally recognized framework that moves beyond the individual to holistically address school health, leading to the development of health-enhancing behaviors while also improving educational outcomes” (Government of Alberta, 2009, p. 1; JCSH, 2019; Roberts, 2016). This program has the potential to become a cornerstone in the delivery and implementation of quality health and physical activity programs, in an attempt to promote and develop physical acuity, bodily awareness and student wellness in an educational setting. CSH incorporates wellness as one of its integral outcomes, and is achieved through quality health and PE programs, which result in the development of knowledge, skills and attitudes to assist students to make appropriate life choices (HPEC, 2017).

The program itself has four major pillars within its structure: the teaching and learning environment itself, students are taught in both curricular and non-curricular frameworks to enhance their knowledge base, teachers are trained in resource use, and activities serve as building blocks to aid in the students’ health and well-being goals pertaining to both social and physical domains. The emotional well-being of students and teachers and physical environment are both crucial in the development of CSH programs. Partnerships and services, health, education and other sectors of the larger community work together to advance school health. All policy, management practices, decision-making processes, rules, and procedures that contribute to the promotion of health and well-being are an integral part of this pillar (Bassett-Gunter, 2012, p. 7). Accordingly, “this whole-school model builds capacity to incorporate well-being as an essential aspect of student achievement” (JCSH, 2019). The interdependence between health, physical activity and education has been well documented. Healthy students are better learners; better-educated students are healthier (JCSH, 2019). The implementation of CSH has the

potential to facilitate numerous benefits encompassing the physical, mental and emotional spectrum of student development. The following are several of the essential benefits this program has been shown to elicit in students at school. CSH recognizes that healthy students retain information more effectively and perform more consistently. The CSH initiative empowers schools to directly influence students in the areas of health and personal behavior development through the incorporation of health and wellness disciplines into all aspects of school and learning (JCSH, 2019). The development and implementation of this program is contingent upon the willingness of the principal or administrators to play a critical role in its inception and success. Change should be initiated and implemented in a step-by-step process in an effort not to overwhelm staff, further increasing the likelihood that changes are sustained (Roberts, 2016). Their efforts and leadership set the tone for the rest of the staff and stakeholders in their acceptance and perceived value toward the program.

Conclusion

Based on the data gathered for the completion of this project, a robust physical education and physical activity program can benefit all aspects of students' cognitive development. Student engagement is the key to catalyzing these developments. In order to engage students in their education processes, it is recommended that all activities be student-centered and thus enable them to develop a sense of connectedness (Bassett-Gunter, 2012, p. 13). Within the confines of classroom and outdoor settings, physical activities may facilitate student engagement in a two-way relation, especially if time has been allocated for that purpose. Physical activity breaks in a classroom setting allow students a mental and physical break, resulting in mental refocus (CDC, 2013). All of these programs are unstructured and cost effective. Recess and brain breaks have been used successfully in the past and need to make a reappearance. Activities

conducted in this manner allow students the ability to choose their own degree of involvement, which prompts inclusion and engagement.

Student involvement and engagement are vital for shaping the social environment and the culture of that school (Bassett-Gunter, 2012, p. 13). Schools need to promote physical education to students as a fun, inclusive, and welcoming school subject in order to elevate participation and engagement. Prioritizing physical activities at school, treating PE as being as important as other core subjects, and investing in the training and skill development of teachers who are responsible for a Comprehensive School Health program, all ensure its quality. Fullen (2014) states that principals who act as agents of change focus on their team over themselves, hire the best people for the team, invest in human capital, and build a team environment (p. 131). All of these leadership practices mirror and enable the objectives of a CHS.

More research and data collection are necessary regarding all the areas outlined in this capstone. Specifically, additional research needs to be conducted pertaining to the role that principals have in the implementation of CSH initiatives, and on the impact this program could potentially have from the standpoint of teachers, students and other stakeholders. Further research highlighting leadership's perspective on this initiative would allow for significant changes to student wellbeing and school culture. Research is also needed regarding unstructured active play, particularly in classroom settings. Specifically, data need to be obtained on the culture of recess, particularly: the benefits of social interconnectedness on the playground, the benefits of unstructured play, the importance of guidance during supervision (modeling the way), and how to structure environments to encourage active play (McNamara, 2015). With these limitations, current research nonetheless indicates the need for the children and youth in Canada and other countries to reduce their sedentary behavior and get

up out of their seats, play, take risks, and enjoy an active lifestyle.

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