

An Investigation into the Effects of a Daily Running Program on Students
Social and Emotional Behaviours

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Abstract

Background: There has been an increase in challenges within public schools in terms of student negative behaviours throughout Canada (Grossman, News & News, 2019; Sun & Shek, 2012). Although there are a large variety of explanations that can be thought of to explain these challenges, much insight is linked to struggles such as home stresses, including financial strain, changes in family dynamics, as well as causes such as the COVID 19 pandemic which created changes to childrens' social experiences and stability over the past few years (Dubinski, 2023; Shamnadh & Anzari, 2019). Many researchers have found physical activity to be a positive reinforcement to assist students in overcoming difficult behaviours and finding success in strengthening their social and emotional abilities (Biddle, Gorely, Mutrie, Mutrie, & Gorely, 2015).

Objective: The objective of this study is to determine if by implementing increased physical activity into students' school days, there will be potential benefits presented to students' social and emotional challenges. The research examines an 8-week study with grade 4 and 5 students (9-10 years of age) who are observed with and without a 15-minute daily run.

Methods: This study used a mixed method, post positivist approach and used both qualitative and quantitative data. Participants (N=22, ages 9-10 years old) completed pre and post surveys of the Trait Meta Mood Scale-24 (TMMS-24) to determine student insight on their social and emotional connections to struggles they had at school. Quantitative data was recorded of students social and emotional negative behaviours that were presented throughout the 8-week study. Qualitative data was recorded to allow for greater understanding in students reflectiveness and potential growth in their emotional regulation.

Results: Paired Sample T-Tests were done to determine any change in social and emotional negative behaviours during the 8-week running program. The observable negative behaviours throughout the study showed no statistical significance (Significance= <0.358 , $F(1,20) = 0.886$, $P=0.958 >0.05$). A Paired Sample T-Test was also done pre and post running program on student responses to the TMMS-24. These results showed a statistically significant change. (Significance= < 0.008 , $F(1,16) = 9.012$, $P=0.640$). Based on the qualitative data analysis, results showed increases in students' growth in their emotional reactiveness and reflectiveness throughout their school day during the 8-week program.

Conclusion: An 8-week daily running program did not provide significant changes in the number of students social and emotional negative behaviours that occurred. Students' reflectiveness and growth in understanding their emotions, however, did have a significant increase which was supported by both the quantitative results collected from the TMMS-24, as well as the qualitative data analysis. Recognizing the potential beneficial change in students' emotional reactiveness and reflectiveness when issues arise at school, supports the understanding that increased physical activity, specifically a daily running program, can support students social and emotional experiences at school.

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Chapter 1

Introduction

In an ever-changing educational system, inundated with technological and family complexities, students are presenting increases in negative social and emotional behaviours (Dove, Wong, Gustafson, & Corneil, 2020; Dubinski, 2023; Shamnadh & Anzari, 2019). According to a report presented by Primary Sources and the Bill and Melinda Gates Foundation (2012), experienced teachers reported “seeing more students with challenges related to shifting demographics, as well as socio-economic and behavioural issues” (Primary Sources, 2012, p.48). In my personal experience as an educator, I have witnessed behaviours such as increased physical upsets, unstable and unhealthy peer relationships, as well as emotional breakdowns, where students may withdraw or effect their learning and the learning of others. Primary Sources (2012), share findings that when surveyed, teachers’ perspectives show that 62% more students present behavioural issues that affect teaching instruction. Although many factors come into play when looking at the ability of students to self-regulate and present appropriate social and emotional behaviours in the classroom, it is the school system that is often a consistent space of learning, and therefore an effective place for students to overcome these struggles and improve their future developmental potential (Knisel, et al. 2017).

In recent years, I have seen increasing levels of energy in students who are lacking the ability to sustain their attention for long enough periods to withstand the school day in a responsible manner, which is supported by other researchers when looking at student’s experiences in school (Mizuno, Tanaka, Fukuda, Imai-Matsumura, & Watanabe, 2011). Many of these students are diagnosed with attention deficit hyperactivity disorder (ADHD) which has

reportedly increased over the past couple of decades in the United States from “6.1% in 1997-1998 to 10.2% in 2015-2016” (Xu, Strathearn, Liu, Yang, & Bao, 2018, p.4). These increases in diagnosis however do not explain the total jump in behaviours. I have seen many students, those with or without a designation, begin to present outward negative behaviours due to the lack of structure that many teachers are providing their students. This is often the case as many teachers are instead, allocating their instructional time to solving student’s negative behaviours. It is noted that “when students can predict the events throughout their school day, they are more likely to be engaged and less likely to display problem behaviour” (Kern & Clemens, 2007, p.67). This predictability and routine can be difficult for teachers to maintain in their classroom when constantly trying to solve students’ emotional struggles. With children spending so much of their developmental years at school, the ability to provide consistency is important. This consistency can be done in many ways to support students, such as daily schedules and full-time teachers. It can also be done on a smaller scale, by offering students regular daily outlets for expressing themselves, or burning off energy, which is the example presented in this research.

With working in schools for the past 12 years, it has become evident in my professional opinion, that the number of struggling students is increasing. I have seen an even greater increase since the COVID 19 pandemic. Lloyd (2023) shares how BC teachers are seeing social and emotional struggles, such as resilience, problem solving, and conflict, more often than compared with students prior to the pandemic. To assist in remedying these issues, the BC School Curriculum offers students in kindergarten to grade 12, Social Emotional Learning instruction (SEL) which through typical in-class lessons, teaches students how to understand their feelings and emotions, and express these feelings in appropriate ways to get them back to a mindful state of being able to learn (BC Curriculum, 2023). Jones and Doolittle (2017), present the

importance of having SEL in schools and list three important benefits. First, is that it helps schools to establish a healthy population, as children spend a large amount of their developmental years in school. SEL programs have also shown to increase students' academic successes and decrease behavioural or emotional struggles. Finally, that it can impact public health, as it can be preventative of students' future struggles opposed from intervening once the issues have already occurred (Jones & Doolittle, 2017). Some specific strategies or programs that are used to teach these skills, include the Mindup program, Kelso's Choice, and The Zones of Regulation (Mindup, 2023; Kelso's Choice, 2021; The Zones of Regulation, 2011-2023). In my experience, although these programs will work for many students and assist in them overcoming complex feelings they experience in their school day, the ability to have some students be present and focused enough to take in these lessons is difficult. I have seen many students thrive on more physical outlets to help overcome difficult emotions and therefore felt the potential of having more physical activity in a student's school day, could benefit and support the SEL work that is being done.

Physical activity has been taught in schools for decades as early educators and researchers found benefits in children learning the developmentally appropriate skills to allow them to experience lifelong healthy habits (Stelzer, 2005; Tonge & Okely, 2021). Physical activity which Caspersen, Powell and Christenson (1985), refer to as being "bodily movement produced by skeletal muscles that results in energy expenditure" (p.126), has been seen as an area of controversy in schools with some seeing it as an unnecessary component of a student's day. Physical Education has been taught in schools since 1909 in Canada (Morrow, 2013). Although Provinces throughout Canada focus on different aspects of physical and health education (PHE) based on specific curriculum, British Columbia focuses on big ideas that

connect back to two main benefits: an individual's well-being, and developing a balanced lifestyle (BC Curriculum, 2023). The benefits of physical education have been explored throughout the years with many researchers seeing connections in improved academic performance, as well as social skills, self-esteem, and cognitive development (Bailey, 2006). In recent years, consideration of the effects of physical activity have continued to expand and a broader term, encompassing an even greater understanding of movement, has been defined as Physical Literacy (Whitehead, 2010). Whitehead (2010) defines Physical Literacy as "the motivation, confidence, physical competence, knowledge and understanding to maintain physical activity throughout the lifecourse". This definition offers a greater holistic understanding of the importance of physical education. Having this broader understanding is imperative as some educators have seen physical education as a way to teach specific skills, typically sports, or recreation activities. This narrowed perception, however, could influence some students to withdraw from physical activity throughout their developmental years if they don't feel naturally skilled in the sports or activities they are taught. This could then hinder a child's willingness to engage in physical activity beyond their educational years and therefore limit the lifelong healthy habits that physical literacy looks to instill. Whitehead's (2010) work focuses on the embodied and lived experiences of individuals and illustrates how physical activity needs to be understood as a greater component to people's lives so that the skills necessary for lifelong physical learning can be acquired. Recognizing the importance of physical education for students helps support the push for teachers to see physical education as a necessity and how it should potentially be a larger part of student's educational journey.

Healthy Schools (2020), shows how educators are looking to increase students' physical literacy so that children can become more physically active. Not only is physical activity good

for a person's body, but also social, emotional skills, anxiety, stress, and developmental well-being (Communications, 2022). The connections that are made between physical literacy and students' developmental well-being is encouraging and supports my research study in that by offering students daily increased physical activity, students' social and emotional experiences may be benefited.

With understanding the benefits that can develop from physical activity, including, attention, motivation, and social and emotional well-being (Biddle, et al. 2015), it can be presumed that by allowing an energy outlet for students in the form of increased physical activity, students may be given the necessary outlet to regulate in a healthy and productive way. This study uses a daily running program developed by me as the researcher, which uses various aspects of pre-established running programs such as the 100 Mile Club (100 Mile Club, 2021), and The Daily Mile (Chesham, Booth, Sweeney, 2018). These running programs are designed to encourage students to participate in fun and meaningful physical activities with their peers, with some using reward systems to allow for competitive options for further student motivation. These programs among others, focus on motivating the physical, academic, and emotional well-being of students. There is a clear understanding in research studies presented, that students fitness levels, academic achievements, and on-task behaviours are benefited by implemented and increased levels of physical activity during a school day (Biddle, et al. 2015; López-Gil, Oriol-Granado, Izquierdo, Ramírez-Vélez, Fernández-Vergara, Olloquequi, & García-Hermoso, 2020; Malik and Tyagi, 2021). There is, however, little understanding and research supporting how the implemented programs effect students' social and emotional behaviours. It is therefore necessary to take the current understanding and go deeper by looking at the potential benefits that can be acquired by increased physical activity regarding a child's social and emotional experiences.

To understand the connection of physical activity and students social and emotional experiences, I have created a research project to uncover any potential impacts between the two. My question of focus therefore is, will an implemented daily running program improve students social and emotional negative behaviours?

Using 22 grade 4 and 5 elementary students in Langley British Columbia, both quantitative and qualitative data were collected. The following chapter will examine past literature on the subject area and how this research is relevant based on what has been found by other researchers. In Chapter 3, the methodology and research design used will be presented, followed by Chapter 4 where the results and findings established based on the data collected will be shared. Chapter 5 will discuss these findings in connection to the literature review, and finally conclude with Chapter 6 acknowledging the strengths and limitations of this study as well as suggested areas for future research.

Chapter 2

Review of Literature

The introduction has highlighted what is being seen in schools and why research working to assist students in bettering their educational journey, is important. This chapter explores research that has been done in Canada as well as in other parts of the world on how physical activity benefits children in multiple ways. The research shared, sheds light on some of the issues facing students and teachers today and offers insight into how education can provide a solid basis for improving the potential of unhealthy generations in the future. The consistency of school offers students an ideal environment to learn and develop lifelong healthy habits (Knisel, et al. 2017). Schools can promote health, and therefore has a large impact of reaching all students, regardless of social barriers that may be present. Some of these barriers may include family dynamics, financial restraints, extra-curricular opportunities, socioeconomic status, or geographical differences. When referring to the health of future generations, the benefits that have been explored by past research not only looks at the physical health benefits, but also those benefits that can be provided socially, emotionally, and even psychologically (Biddle, et al. 2015).

Some specific topics that will be discussed in this chapter, are the types of physical activities that have been implemented into schools. These include specifics about the duration, and consistency of the activities, and the self-regulation or overall behavioural changes that have been noted to be impacted, either positively or negatively by physical activity. Also, how impactful physical activity is on students' peer relationships, academics and overall success throughout their educational experience. The chapter explores the need for students' participation of movement at school, how this form of activity can be done, why it should be done, and the

potential benefits that can be accomplished.

Researchers all over the world have looked at the implications that specific components have on a child's behaviour (Biddle, et al. 2015; López-Gil, et al. 2020; Malik and Tyagi, 2021). A study in 2020 on Chilean children aged 8-12 looked at not only physical activity but also screen time and nutrition and its connections to self-regulation struggles (López-Gil, et al. 2020). There was clear evidence shown throughout this study that a child with a healthy lifestyle was more likely to self-regulate compared to inactive children. Even more so, those with limited screen time. Malik and Tyagi (2021), offer insight into the benefits of screen time, or technology, recognizing that it offers students more conveniency in communication, learning at home, among other helpful qualities that technological devices offer. Malik and Tyagi (2021), also acknowledge the issues that could develop including health and well-being, specifically aspects such as adolescent stress, mental health, obesity, social media, and mindfulness practice. López-Gil, et al. (2020), share their research regarding technological implications for students and the connections that have been made with physical activity which could be helpful in offering more educators insight on how to best support their students.

This look into past peer reviewed studies (Bean, Kendellen, & Forneris, 2016; Biddle, et al. 2015; Campbell, Eaton, & McKeen, 2002; Cañabate, Santos, Rodríguez, Serra, & Colomer, 2020; Greenspan, Whitcomb, Santana, Fefer, & Hayden, 2022; López-Gil, et al., 2020; Malik and Tyagi, 2021; Reid, MacCormack, Cousins, & Freeman, 2015; Savina, 2021; Vasilopoulos & Ellefson, 2021) shows noticeable themes that connect to the idea of physical activity and students' beneficial outcomes. With the social and emotional behaviour component being considered, many of the articles showed findings supporting the importance of students' inhibition and their mental ability to respond to an experience in a controlled and processed way

(Campbell, et al. 2002; Reid, et al. 2015; Savina, 2021). Savina (2021), synthesizes research that has been done regarding a child's self-regulation and learning in schools, and shares that response inhibition "creates a delay in responding which makes it possible to override habitual behavior" (p.493), which in the end allows students to learn new skills. A wide array of skills was looked at including mental and financial skills (Moffitt, Arseneault, Belsky, Dickson, Hancox, & Harrington, 2011), reading, math, and vocabulary skills (Ponitz, McClelland, Matthews, & Morrison, 2009), and behavioural and social competence (Lobo & Winsler, 2006). Savina (2021), offers an amalgamation of research that has shown positive results in children with increased inhibitory skills and the benefits that come when strengthened. Savina (2021), highlights an article done by Diaz, Winsler, Atencio, & Harbers (1992) in which students who were rated by teachers as having difficulty with attention and impulsivity, were trained with using private speech. Private speech refers to a theory presented by Vygotsky (1978), where children use language not only to communicate but to "plan, guide, and monitor their behaviour in a self-regulatory way" (Diaz et al. 1992). Diaz et al. (1992), studied students who were given goal-oriented tasks such as building a model. Students were observed in their ability to increase the difficulty of the tasks, as their private speech skills were developed through intervention of private speech training sessions. Results showed that the response inhibition, being children's ability to process and manage their behaviours, in this case impulsivity, were improved after the private speech training was presented (Diaz et al. 1992).

With the variety of studies Savina (2021) presents regarding children's inhibition in early childhood, primarily studies done with students in early preschool to early elementary, a clear connection can be made regarding what teachers are seeing in some students and provides clarity on where the issues are potentially stemming from. As mentioned previously, there are

many factors that come into play when a child shows unregulated social and emotional behaviours, but Savina (2021) acknowledges the notion that difficult or traumatic experiences in early childhood, could substantially impact a child's ability to regulate, and how their inhibition may have become weakened compared to those in more stable childhood environments.

Although Savina (2021) provides insight on a few neurological processes, including response inhibition, voluntary attention and working memory in relation to students' self-regulation, it was the response inhibition that intrigued me the most. Savina (2021) looked at research where both students' self-regulation contributes to their learning as well as their behavioural and emotional issues. Savina's (2021) findings show that movement, along with other methods used such as mindfulness, and classroom environment, improved students' self-regulation both in their ability to learn and control emotional behaviours. Savina (2020) notes that due to the studies investigated, "self-regulation skills serve as a protective factor against school failure" (p.498).

Campbell et al. (2002), look at children's physical/motor skills in connection to their habitual task performance skills (inhibition), and explain the specific issues and assists for weaker inhibitory skills. For this study, some of the tasks students were given included tapping, marble sequencing, shape drawing, and hand switching. Using motion recorder wrist and ankle bands, physical output was assessed resulting in increased habitual skills with those children who had higher physical/motor skills. Campbell et al. (2002) acknowledges the importance of children's inhibitory skills and notes that depending on a specific task, the ability for inhibition is crucial, for example "social (e.g., negotiation or conflict resolution) ... require the control of emotional arousal" (p.290). Without this control, a child may lack the ability to overcome social or emotional scenarios they experience.

With a deeper understanding of the cognitive implications that are at play with children's

behaviour, it was found that assistance in strengthening a student's inhibitory skills is necessary to assist in preventing potential social and emotional struggles (Campbell et al., 2002).

Vasilopoulos and Ellefson (2021) present connections to the study done by Campbell et al. (2002), as they too looked at the links between physical activity and improvements in other aspects of children's development, in this case behavioural and academic achievements.

Vasilopoulos and Ellefson (2021) did research that looked at students' development longitudinally regarding their physical activity and the self-regulation and academic achievements that were found. Vasilopoulos and Ellefson (2021) used 7, 11, and 14-year-old children in England. Behavioural and self-regulation characteristics were reported by both parents and teachers, with various tasks being provided including questionnaires regarding the children's social, behavioural, strength and difficulty observations and skills. Teachers used various assessments at the three different age groups to share specifics on academic abilities. For the 7-year-old participants, the academic skills that were assessed included literacy and math. For the 11- to 14- year-old ages groups, all other core subject areas including science, and non-core subjects such as music and art, were reported through various teacher assessment tools (Vasilopoulos & Ellefson, 2021). In terms of the physical components, participants were measured at all age groups on their physical intensity, moderate to vigorous, as well as the child's enjoyment of physical activity. Monitoring devices were also worn in this study to track the participants' physical activity output (Vasilopoulos & Ellefson, 2021). The results showed that children who experienced physical activities in early childhood were better self-regulated in later years. Vasilopoulos and Ellefson (2021) therefore conclude that with more self-regulation skills, the more effective learning and academic attainment can be achieved. Therefore, perhaps having increased interventions for children at a young age may assist in their potential, if the

focus is more on a child's attention than on the specific behaviours being presented (Vasilipoulos & Ellefson, 2021). Due to the longitudinal design of this research, early interventions regarding physical activity and healthy behaviors being established will allow children to succeed more effectively during their later childhood years. With the confirmation that physical activity links to benefits not only in academic but emotional regulation, it is then necessary to determine what type or amount of activity provides the best outcomes.

Reid et al. (2015) examined the well-being and emotional problems in both elementary and secondary students in Canada. This study looked at school climate and physical activity in schools. School climate can refer to aspects such as academic work being emphasized, physical environment being positive and maintained, and teachers being supportive (Kazdin, 1998). Reid et al. (2015) share that a positive school climate that is safe and welcoming for students is an important component to a child's school experience. This study had students in grade 6-10 within Canada, complete three different indexes that connected to the aspects being explored including physical activity, emotional problems, and well-being, as well as school climate. These participants were split into younger grades (grade 6-8), and older grades (grade 9-10). These categories including physical activity, emotional problems, well-being, and school climate, were pulled from the various indexes and then analyzed to find correlations between the different areas. Results showed that there was no significant difference between the effect for emotional well-being based off the different ages groups, and that they both equally showed beneficial outcomes (Reid et al, 2015). Reid et al. (2015) concluded that school climate and physical activity were more predictive of emotional well-being than that of emotional problems (Reid et al. 2015).

Cañabate et al. (2020), analyzed emotional self-regulation looking at emotional

intelligence including aspects such as emotional attention, clarity of feelings, and emotional repair to fourth year, grade 9, PE students. This study considered information presented by students' participation in the Trait-Meta-Mood Scale-24 (TMMS-24), which is a tool to assist in measuring a student's emotional experiences (Salovey, Mayer, Goldman, Turvey, & Palfai, 1995). In this study shared by Canabate et al. (2020), students participated in six introjected practices including yoga, Tai-Chi, Eutony, active global stretching, Qigong, and corporal dance expression. They also practiced daily rituals of sitting in silence and relaxing, as well as reflecting on their emotions. These forms of physical activities were implemented to determine if the results presented by the Trait-Meta Mood scale differed based on the pre-implemented results and that of the emotional intelligence shared throughout the assessment after the physical activity forms were experienced. There was improvement shown in all areas addressed in the survey regardless of gender, including perception and regulation of emotions, with girls showing a significantly greater difference than boys (Canabate et al, 2020). Canabate et al. (2020) concluded that introjective practices provided younger students with the tools to handle problems they faced in a more controlled emotional state, allowing them to better understand their bodies and their emotions, and therefore have a better ability in controlling it. The research done by Canabate et al. (2020), demonstrates that not only does the increased physical activity improve student's reflectiveness of their social and emotional behaviours and feelings, but that less impactful activities such as stretching, or slow movement implementations can still be beneficial and the more intensified physical movements such as running, are not necessarily needed.

Larsen, Samdal, & Tjomsland, (2013), researched teacher implementation of physical activity programs in Norway. While they looked at past policies and programs that had been implemented to improve students' physical activity outcomes, they found most of the

interventions focused on student input and concluded that more research was needed on the actual implementation and therefore teacher understanding (Larsen, et al. 2013). The participants of this research were teachers in both primary and secondary schools in Norway. Qualitative data was collected through interviews with teachers throughout all grade levels to determine where the issues may be coming from. It was found that most of those educators in the study were able to insert 20-45 minutes of activity per day, but none were able to implement the 60 minutes a day that governmental health policies suggest (Larsen, et al. 2013). The specific activities were not specified but Larsen, et al. (2013) notes that schools were to follow guidelines based on principles developed through the Norwegian Network of Health promoting Schools. Reasons for not meeting the 60 minutes of daily physical activity included teacher competence in teaching physical activities, confidence in their knowledge and teaching abilities, as well as time allotted in a school day to offer students the necessary amount of time (Larsen, et al., 2013). Kelly, Carpenter, Behrens, Field, Luna, Tucker, & Holeva-Eklund (2019), looked at teachers' reasons for being unable to provide the amount of time suggested and where progress was being made. After a variety of teachers were interviewed, it was noted that most positive impacts were from those educators who had professional development opportunities, and that there was administrative support with additional class time. Also, that funding needed for additional resources that could bring positive effects on teachers' physical activity implementations, was provided (Kelly, et al. 2019).

Bean, et al. (2016), examined how physical activity, specifically in an instructional setting such as a physical education class, could focus on skill development not only physically, but also lifelong skills such as problem solving, social skills, and responsibility. This study looked at a group of female youths aged 11 to 16 years old, from a Boys and Girls Club in

Ontario, Canada. These participants were interviewed throughout a two-year program with questions regarding how the skills developed using physical activity were impacting other areas of life such as effort, responsibility, and leadership. Bean et al. (2016) focused on determining if by providing physical activity programs that explicitly focused on the skill development and transferability to life skills, a person would have better life skills in the future. The transferability of the skills taught through physical activity allowed students not only the ability to learn self-regulation skills during their childhood years, but also provided them essential skills necessary for prospering as adults in the future (Bean, et al. 2016). Some of these skills included emotional regulation, focus, goal setting, respect, responsibility, social skills, as well as the physical skills including enjoyment of sports, running further, as well as pride of one's accomplishments (Bean, et al. 2016). These additional factors presented by Bean et al. (2016) although not specific to running only activities, does provide further evidence of how increased physical activity can add to children's skills in life.

Greenspan, et al. (2022), looked at the connections and importance of not only increasing physical activity in schools but also having the schools' mental health practitioners, such as counsellors or youth care workers, increase learning for students. The mental health supports would assist in developing healthy mindsets along with healthy bodies. Increasing the level of social emotional learning (SEL) as well as physical activity, is said to have a greater impact on a student's school experience but requires more training and possible linking of the two throughout other curricular areas (Greenspan et al., 2022). In relation to schools in British Columbia, school mental health practitioners would be considered school counsellors and youth care workers that team up to teach students with mental health challenges including social, emotional, and behavioural barriers, how to overcome their struggles.

With research showing the need for more time and attention of schools implementing more physical activity into a student's school day, (Greenspan et al, 2022; Kelly et al, 2019; Larsen et al, 2013) the knowledge of what activities could be inserted into schools, or what activities are most effective for students' development physically, mentally, emotionally, and behaviourally, needs to be considered.

Research has shown benefits in certain types of activities, (Campbell et al, 2002; Larsen et al, 2013; Reid et al, 2015) and movement in general, appears to be the underlying factor to improve children's regulation. Giles, Eddy, Brunyé, Urry, Graber, Barbour, Mahoney, Taylor, & Kanarek (2018) studied specific emotional benefits with running, but used adult women for the study which may have different results than that of school aged children. Without having specific evidence on how a child's running experiences would affect their social and emotional behaviours and ability to self-regulate, the more necessary and relevant my research in question is.

The research on physical activity (Bean et al. 2016; Campbell et al. 2002; Kelly et al, 2019; Larsen et al. 2013; Reid et al, 2015) then led me to uncover various implemented physical activity programs that have been explored. Programs include classroom movement breaks, brain breaks, cardio based activities, structured recesses, body weight style exercises, as well as movement activities incorporated into teachers' class instruction (Glapa, Grzesiak, Laudanska-Krzeminska, Chin, Edginton, Mok, & Bronikowski, 2018; Vasilopoulos & Ellefson 2021; Bremer, Graham, Veldhuizen, 2018; Howie, Schatz, Pate, 2015). Howie et al. (2015), examined not only the benefits of physical activity, but the time allotted for the activities. The research looked at differences between 5- minute, 10- minute, and 20- minute movement breaks and the mathematical improvements found. Results showed increases in math performance with the 10-

and 20-minute movement break implementation (Howie et al., 2015). This helped to determine not only if these implemented breaks are making a difference, but if there is a more appropriate amount of time associated with greater outcomes. Howie et al, (2015) also noted that many schools or teachers used a 5-minute interval break as it was more convenient and more realistic in accomplishing throughout the day in a consistent manner. However valid this point may be, teachers may need to adjust their instructional time to allow for the greatest benefit for students according to de Jonge, Slot-Heijs, Prins, & Singh (2020). de Jonge et al. (2020) analyzed the Daily Mile and examined the effects on aerobic fitness levels. Using grade five to eight students in the Netherlands, de Jonge et al. (2020), studied the impact on students' abilities after implementing the Daily Mile at least three times a week, over a 12-week time frame. Results showed increases in students' aerobic fitness levels. de Jonge et al. (2020), highlights in their research that interventions or implemented physical activities don't need to be complicated or presented for a long period of time, and that benefits can be seen at different aerobic fitness abilities. Although this contradicts the findings from Howie et al. (2015), on 10–20-minute activities, the outcomes here were specifically aerobic based and did not take into consideration the academic or behavioral changes, nor specified a minimum time frame for activities.

The Daily Mile is a running program designed by a teacher in Scotland in 2012 to improve students' fitness levels (de Jonge et al., 2020). There are a variety of studies discussing different components of the program including cost effectiveness, teacher perspectives on implementation, among others (Breheny, Adab, Passmore, Martin, Lancashire, Hemming, & Frew, 2018). Breheny et al. (2018), claims that individuals between the ages of 5 and 18 should have a minimum of 60 minutes of moderate or vigorous physical activity every day. (Breheny et al. 2018). Breheny et al. (2018) share that “this is based upon evidence of the long-term benefits

of physical activity, to include both physical and psychological well-being” (p.3). Breheny et al. (2018) examined various Daily Mile Running programs, and the effectiveness when implemented in terms of cost-effectiveness as a primary focus, with secondary focus being on BMI (body mass index) score, change in wellbeing, academic attainment, physical fitness, and staff wellbeing. This was done as a cluster randomized study, and discussed the benefits that were shown, specifically in cost-effectiveness. Breheny et al. (2018) found the simplistic and low costs involved with the implementation, made it an effective program to use in primary schools to increase public health.

Pippi, Buratta, Germani, Fanelli, & Mazzeschi, (2020) agree with these suggestions of 60 minutes of physical activity every day and acknowledge the importance of ensuring students are provided an adequate amount of physical activity every week. Their research looked at students in Italy, primarily in grade one, and determined the benefits presented after 2 hours of physical activity that was implemented into their school week over eight months. This research examined a variety of different physical health characteristics including speed, strength, flexibility, as well as sedentary habits, and psychological well-being. Measuring tools, assessments, and questionnaires were used to track data to determine the impact on students during the program. The activities presented were based on the physical health curriculum in Italy and included sports and games. Pippi et al. (2020) concluded that with implemented structured physical activity, even with as little as two hours per week, resulted in healthier physical, mental, and psychosocial outcomes for primary aged children. Pippi et al. (2020) also acknowledges the change that has been seen throughout recent years, and the increase in unhealthy habits, specifically low levels of physical activity that are being established in children today. Although this study looks specifically at students in Italy (Pippi et al. 2020), the research found that the influx of

technology, among other factors, has significantly decreased a child's motivation and desire to be physically active, as well as provide many other potential issues in childhood development.

The research that was found regarding the benefits of running programs was inspiring. Not only with the benefits that were shown fitness wise, but also that the implementation of such a program can be accomplished, as well as potentially improve a child's social, emotional, physical, academic, and psychological well-being.

Theoretical Framework

Behavioural theory, specifically cognitive-behavioural theory, focuses on recognizing an individual's response to their environmental factors, and therefore was used as a viewpoint when analyzing and interpreting the data gathered. Gonzalez-Predes and Resko, (2012) share that cognitive-behavioural theory is "rooted in the fundamental principle that an individual's cognitions play a significant and primary role in the development and maintenance of emotional and behavioural responses to life situations" (p.14). This theory considers students' processing of situations that inevitably determines how they respond (Gonzalez-Predes and Resko, 2012). With the information from Gonzalez-Predes and Resko (2012), about how important a person's cognition is regarding their emotions and behaviours, inhibition control comes into play. Therefore, based on experiences, in this case an increase in physical activity, students may be able to improve their inhibition, resulting in more positive social and emotional behaviours.

Cognitive behavioural therapy or CBT (Gonzalez-Predes and Resko, 2012) has many models that support people with various struggles associated with their experiences. Gonszalez-Predes and Resko (2012) discuss the different approaches that target disorders such as Post Traumatic Stress Disorder or PTSD. Three fundamental ideas are introduced that explain the purpose of CBT in assisting people in overcoming behavioural struggles they experience

(Gonzalez-Predes and Resko, 2012). First is that cognitive processes and content can be accessed and known. Second, that a person's thinking determines the way they respond to one's environment. Finally, that those thoughts or cognitions can be targeted and changed. Although those with PTSD would be given various interventions provided by trained practitioners, the understanding that people have the capability of changing their way of thinking to better their responses to experiences, is important. Therefore, CBT supports the possibility that by increasing a child's physical activity levels, benefits can be made. CBT is the understanding that an individual's experiences impact their cognitive functioning allowing them to act or respond in a certain way. It is the understanding that a person's thinking determines a person's behaviours and feelings. With the potential of negative experiences, a person's responses to a situation, can be seen as at times socially unacceptable behaviours. These behaviours can have significant impacts on an individual's social, emotional, academic, physical, and mental well-being (Glapa, et al. 2018; Vasilopoulos & Ellefson 2021; Bremer et al. 2018; Howie et al. 2015). With evidence supporting the idea that implementing more physical activity into a child's school day can be beneficial in supporting positive behaviours, the more inspired I am in knowing what could be done for my students to improve their school experiences in the future. Although all benefits that have been noted are important, supporting information regarding a child's self-regulation is the focus for this research. With a child showing progress in their ability to self-regulate with an increased physical activity program (Glapa, Grzesiak, Laudanska-Krzeminska, Chin, Edginton, Mok, & Bronikowski, 2018; Vasilopoulos & Ellefson 2021; Bremer, Graham, Veldhuizen, 2018; Howie, Schatz, Pate, 2015), the more potential they have at participating, learning, and making beneficial cognitive decisions for themselves (Gonzalez-Predes and Resko, 2012). These decisions are likely the factors that determine a child's experience in school (Glapa,

et al. 2018; Vasilopoulos & Ellefson 2021; Bremer et al. 2018; Howie et al. 2015). These experiences can be positive or negative and can include their social interactions and acceptance by peers, their emotional intelligence allowing them to overcome events throughout the day, and to ensure they can come to a calm and healthy mindset which will likely allow for learning, and joy in their educational experiences. Therefore, this research was supported by using the cognitive behavioural theory as a basis for uncovering the links of student's self-regulation, and their physical activity levels.

Chapter 3

Methodology

The previous chapter has provided insight into some of the research that is being done to understand and improve the experiences of students in schools. The following chapter explains the methodology for this research project. Components will include the research paradigm and approach used throughout the research study, as well as why this specific research question and topic are necessary and relevant. The methodological approach and the process and procedures taken to complete the project, will then be discussed. The specifics about the research setting as well as participants involved will be addressed, followed by the ethical considerations made.

Research Paradigm

In recent years, schools are seeing increasing levels of energy in students who are lacking the ability to sustain their attention for long enough periods to withstand the school day in a responsible manner (Primary Sources, 2012). By allowing an energy outlet for students in the form of increased physical activity, students may be given the necessary outlet to regulate in a healthy and productive way. Therefore, the question I sought to answer was, what is the effect of an implemented daily running program on students social and emotional negative behaviours?

This research uses a post-positivist approach. Krauss (2005) discusses that research that comes from a post-positivist approach offers a perspective in which multiple realities may be true and that not everything is knowable. This has been a beneficial approach as it has assisted in my focus and belief that “positivism sets out to predict and control reality” (Kinsler, 2011). This approach connects with my methodological design in showing that by implementing change and controlling reality, beneficial outcomes can be made.

Research Design and Intervention

This mixed method approach has been carried out as an embedded design which means that both qualitative and quantitative data was collected and analyzed at the same time throughout the project. The Oxford Handbook of Multimethod and Mixed Methods Research Inquiry (2015) suggests that a mixed method approach, provides a “fuller, more synergistic, better understanding than using just one approach” (p.xxxix). This research uses a repeated-measures design, which according to Sullivan (2008), is the analysis used when “multiple measurements are taken on each experimental unit” (p.1238). I used repeated measures by collecting data on student’s responses pre running program implementation, as well as post intervention. This was done so that data could be gathered at the different stages of the research project to determine any change that was made based on the implementation being done. With altering the conditions for my students (running versus non running), I could see a potentially clearer result by analyzing different forms of data including tracking of behaviours, surveys, field notes, and participant questionnaires. Sullivan (2008) discussed that by being able to analyze the same participants with various factors being altered, in this case running and non-running, “the test for a difference in treatments will involve a smaller residual or error variance” (p. 1238). Understanding that by using a repeated measures design could allow for a smaller error variance in my results, was important as it helped to ensure I had validity in my outcomes and ultimately could see potential change in students’ abilities to regulate effectively with a more physically active school day. It is noted that a post-positivist perspective when it comes to mixed methods, allows a researcher to “see the importance of qualitative designs that often served to inform the context of their quantitative results by grounding them in lived experience” (Hesse-Biber & Johnson, 2016, p. 36). Recognizing that by having both quantitative and qualitative data

working to strengthen the other, could potentially provide more validity when both methods are utilized, was important. Validity in this research is helpful as some information from students may have the potential of being misunderstood or misconstrued especially when taking into consideration the participants ages and abilities. By having a variety of methods being used to see potential changes in students throughout the data collection period, the more accurate and concise the information would be and the less error in misrepresenting the participants thoughts and reasoning regarding the behaviours, there would be (Zohrabi, 2013).

Methodological Approach

The mixed methodological design allowed for both quantitative and qualitative findings to be considered. This method has been discussed by Johnson and Onwuegbuzie (2004) as providing a more “workable solution and produces a superior product” (pg. 17). By having both methods including participant perspectives in the qualitative data collected as well as the numerical differences seen in the behaviour data tracking as the quantitative, the more holistic and potentially accurate analysis could be made (Johnson and Onwuegbuzie, 2004). This approach allowed for a clear understanding while observing students with their social and emotional regulations and the impact daily physical activity had on the participants.

This research was performed with a reflexive approach to ensure quality and validity in any potential findings or outcomes. Gabriel (2018) illustrates that “qualitative researchers are often undertaking a journey whose conclusion may be very different from their original intentions...they may themselves emerge as different subjects, their ideas, methodologies and even their identities altered in some very significant ways” (p.14). This awareness was essential

in presenting clear, reliable information and allowed for reflective analysis regarding any potential biases or impacts that I, as an educator and researcher, may have had on the process.

The quantitative components included students observed social or emotional struggles which were recorded when students' negative behavioural reactions occurred. This was done by adding the information that was noted into a spreadsheet, then transferring that information into the Statistical Package for the Social Sciences (SPSS, software version 28.0, IBM Corp, 2021) to perform the statistical analysis. SPSS was also used to analyze data presented from pre and post TMMS-24 survey results. SPSS was used to determine if there was a significant difference in the participants negative behaviours once the running program was implemented. In terms of the use of SPSS regarding the surveys, tests were run to determine if there was a significant difference in participants emotional development and therefore score on the TMMS-24 survey, once the running program had been completed. For the qualitative results, including students' reflections, and randomized interviews, NVIVO was utilized to assist in finding connections and themes throughout the 8-week study based on responses from the participants regarding their emotional connections and negative behavioural experiences.

Throughout this study I was able to reach a stronger understanding with evidence supporting the notion that by integrating a daily running program, students would have a focused energy outlet that would improve their social and emotional regulation during their school day creating enjoyment and mental well-being, as well as the attainment of healthy relationships throughout the school.

Methods and Procedures

With so many pieces being looked at, not only in the numbers of behaviours but also insight into the issues and specifics of how students were handling these struggles, the need for a mixed method approach where both quantitative and qualitative data was used was essential. This was a crucial component as it would assist in providing as much information as possible to show the potential benefits daily running could have on students' school experiences.

To allow for a deeper understanding of what the students were feeling throughout this process and the potential daily effects the running program would have on them, a few different forms of qualitative data were collected. The qualitative elements were collected by taking notes on students' specific struggles that were observed such as physical, emotional, or verbal outbursts. Overt participant observation was used to provide greater understanding on what students were experiencing. Strengths of participant observation is said to offer high validity, understanding, and innovation as it offers new questions to be developed to explore the participants experiences or actions even further (Parsons, 2018).

The study was completed using 22 grade 4 and 5 student participants at an elementary school in Langley, British Columbia. The specifics about the participants involved have been noted in Table 1 for consideration. I used convenience sampling to select my participants which means that I was able to select students who were easily accessible throughout the data collection period (Simkus, 2023). Participates were all in the same class from September 2021 to June 2022. The students were selected due to being in the same class on a consistent basis with the same teacher and seemingly well-adjusted and structured daily schedule. This was felt to be a needed aspect of the student selection process as I wanted to ensure any unnecessary factors were removed from the observations that were to be witnessed, that a dysfunctional or unstable

learning environment could have impacted. These unnecessary factors include but are not limited to aspects such as having different teachers coming in and out of the class, different expectations by school staff, inconsistent schedules, minimal classroom management, or unfamiliar learning routines. All members of the class included in the study were provided with guardian approval forms that were signed prior to the data collection period (Appendix E). All students, apart from one, were observed throughout the eight-week study. One student was removed from the participant list due to an intellectual and cognitive delay and therefore understanding in the research process and requirements.

Table 1. Participant Specifics of TMMS-24 (N=21)

Demographic	N	Percentage
Female	15	68.2
Male	7	31.8
Grade 4	11	50
Grade 5	11	50

Once the necessary information and procedures were completed for all participants, including guardian authorization and ethical approvals from the school district and university, the data collection was able to begin with our 22 approved volunteers. The initial month of data collection was done with students participating in their typical school day activities. An Excel spreadsheet was used to track student's negative behaviours that were observed throughout this first month. Information was collected when students social or emotional negative behaviours were present including the day, time, student, actions, and other relevant factors. The specific behaviours that were tracked included crying, yelling at another individual, using inappropriate

language or hurtful words to self or towards others, kicking or hitting people or items such as furniture or equipment, attempting to destroy materials; such as ripping up paper, intentionally breaking pencils, or knocking over structures; running away from class or adults during conversations, or complete withdrawal from participation or communication when being addressed by an individual. These negative behaviours were chosen to be used in the data collection as they were consistent reactions that I had witnessed throughout the past few years in teaching this age group.

The observations made were collected using a spreadsheet with specific categories to have a detailed understanding of the situations. Not only was the specific issue noted, but also the students' reaction to the issue, and how long the struggle lasted for. As an example, if a student was upset at a friend and was crying in the hall for ten minutes, the notes would be described as follows.

Student Name	Student Reaction	Length of Time	Notes/ Struggle
Ex. John Smith	crying	10 min	Upset with peer

These specifics offered a deeper understanding of how the running impacted students as it was evident based on observations, that there was a connection with how long students took to calm down when angry or upset once the daily running program was implemented. A more in-depth understanding of the behaviours presented can be viewed in Appendix G, where a larger sample size of the data collected has been shared.

Throughout the initial week of data tracking, students were presented with the Trait Meta Mood Scale-24 survey (Salovey, et al. 1995). This survey offers students an opportunity to reflect on their emotional intelligence by asking questions that focus on three areas including

emotional attention, emotional clarity, and emotional repair. Students are asked to respond to questions focused on these areas by selecting a number between 1-5 that best represents their feelings regarding their emotions (Appendix C). Response options include never (1), rarely (2), sometimes (3), fairly frequently (4), and very frequently (5), (Canabate, et al. 2020). This was a validated instrument which sought to uncover students' perspectives on statements such as *I often become aware of my feelings in different situations*, or *I have a lot of energy when I feel happy* (Fernandez-Berrocal, Extremera, & Ramos, 2004). I felt this was important when analyzing the qualitative data as it would potentially show a change in students understanding their emotions.

During the second month of this study, students performed daily outdoor runs for 15 to 20 minutes. These runs were scheduled for 9:50am each day to ensure there was consistency throughout the data collection process. This time varied, however, throughout the data collection period due to unforeseen circumstances such as assemblies, unsafe weather conditions, and teacher prep schedules. The running program had motivational tokens that students were able to collect for major milestones accomplished such as 10-kilometer and 25-kilometer completions. The idea of tokens used for motivation, was based on a running program, the Mileage Club (Fitness Finders, 2008; Mileage Club, 2021). The program used for this research, however, was an amalgamation of multiple programs, as we used the term kilometers instead of miles, as well as had daily runs compared to other programs 2-to-3-day requirements. The kilometers students completed have been added for consideration in Appendix H, to highlight any potential connections that were made with the distances as well as motivational tools that were being used. During this second month of data collection, participants' negative behaviours continued to be tracked.

Once the four weeks of running had been completed, the Trait Meta Mood Scale-24 was presented to the participants' again for a post survey comparison. These results have been provided in Table 2 for consideration, which can be found in the subsequent chapter.

These observations of negative behaviours were the quantitative data used for this study along with the TMMS-24 survey. As for the qualitative data collected, the first form was student questionnaires/reflections (Appendix B). Reflections used as qualitative data in research can be beneficial as it follows an effective process of learning, including participants having a new experience, having the opportunity to reflect on that new experience, helping the participant to create an understanding or theory surrounding that new experience, and using that understanding to make decisions or problem solve (Clark, 2009). I chose to use student reflections therefore to see if by having students process their experiences and reflect on their reactions both pre running implementation as well as after, any change or growth in their behavioural regulation would be seen. This was done to get a deeper understanding of their personal emotional perspectives and the specific occurrences they experienced. Questions sought out students' emotions from the week, seeking insight on how they felt, why they felt that way, and how they overcame their emotions (Appendix A). It was designed to have students reflect on any potential struggles they had experienced in the previous days as well as recognize how they dealt with the issues. This questionnaire was distributed to students three times throughout the first two weeks of the 8-week program. After the third questionnaire was collected however, it became evident that the information students were providing was not consistent with the behaviours being observed. For example, one student answered a question regarding if they had any upsetting moments in the past few days, the student wrote "no", but my notes indicated discrepancies as I had observed the student struggling multiple times that week, resulting in tears and yelling at peers. Seeing

multiple students' responding in inconsistent ways to their behavioral reactions that were observed, showed that this form of data collection was not going to provide accurate and valid information to use for my research. These questionnaires as a form of qualitative data were therefore discontinued, however some of the initial responses will be noted in the discussion section of this paper.

The next form of qualitative data collection used was informal interviews with students that had experienced a struggle (Cohen, 2006). Informal interviews can offer less pressure being put upon the participant and therefore may allow them to respond more openly (Cohen, 2006). These randomized interviews (see Appendix B) were semi-structured which means that some of the questions students were asked were general questions to get an understanding of what the student had experienced. These questions often fed into follow up questions that allowed for students to go deeper into their thoughts on the situation. Research such as that presented by Larsen, et al. (2013), used reflections from teachers to deepen the understanding of what potential causes were creating a barrier in students getting in the amount of physical activity suggested. Although the number of minutes the teachers were able to provide their students may have been accessible throughout the research, the likelihood of the research uncovering what actual causes were impacting the teacher's ability to implement that time, would not have been possible without further participant insight shared through the interview process. The interviews done in my research were to ensure there was student voice and clarity in response to the perceived emotional understandings. These discussions were noted down with brief explanations as to what the students felt was the issue, how they overcame the issue, and how they will deal with a similar issue in the future. The interactions provided a much greater explanation for the students' struggles and offered more detailed information about how students overcame their

difficulties. These conversations were had during the pre-intervention data collection period, when students were participating in typical daily activities, as well as during the intervention stage when running was a daily occurrence.

Ethical Considerations

The appropriate ethical considerations were met by ensuring all participants and guardians had a clear understanding of the study and were provided consent forms (see Appendix E) approved by the school district, school administrator, and university supervisors. The Canadian Tri council panel research ethics training had been completed and certified, the University of Wales Trinity St. David (UWTSD) Research Data Management Policy had been read and understood, as well as UWTSD Research Ethics and Integrity Code of Practice (see Appendix F). All research information was stored in a secure password protected location with access available to myself as the sole researcher as well as my research supervisors. Specific ethical considerations I had for this study include wanting to ensure students information and data collected during the process were seen as a tool to assist future students and educator understanding. To ensure I, as the participants teacher, separated myself from the situations and tracked the data as it was presented, and not allowing personal relationships to alter any of the information being recorded, was important to my process. This consideration is one of the important recommendations noted by Prinsloo and Rowe (2014), when discussing student data being used in research, and seeing the data as a “moral practice and duty” (pg. 60). To ensure this consideration was a focus, I used strategies such as taking a moment before addressing a student who may have been presenting a behaviour to allow time for a calm and neutral demeanour to be shared. I also would at times ask the assistance of a fellow staff member to help

the student during a potential upset and then would check in after the situation was diffused to have a more appropriate and thorough understanding and statement from the child on what had happened. Keeping the ethical considerations at the forefront of the research process ensures all members of the study are being protected from future biases and opinions from myself or others involved in the process.

The following chapter will look at the results seen throughout both the qualitative and quantitative analysis and what similarities or themes were witnessed and can be used to explain the outcomes and importance of this research.

Chapter 4

Results and Findings

In the methodology chapter, I have shared the specific components of this research study, including the process and considerations made to ensure effective outcomes. This chapter will share the results and findings of the research study. With the different types of data collection being considered, the results will be broken down into quantitative findings, qualitative findings, and then how the mixed methods approach was necessary to show the robust information provided on this research. The analysis of data regarding behaviours observed had no statistically significant difference during the 8-week running program. The findings between the student surveys, however, found a statistically significant difference in pre and post survey results. The findings revealed clear themes throughout the qualitative data collection and will be discussed in the discussion chapter of this paper. Initial codes include social awareness, emotional reactions, and self-reflection with themes being generated that include seeking an adult for support, competitiveness, and consistency.

Braun and Clark (2006), explain the importance of developing appropriate themes throughout one's research. Uncovering themes throughout this research allowed for a more in-depth understanding of what students were experiencing as I was able to see patterns in their reactions to situations as well as when the behaviours were occurring and what possible causes were at play. Deductive coding was used prior to my data collection process which allowed for three codes to be developed by myself as the researcher (Xu & Zammit, 2020). I felt these codes were important when looking at students' social and emotional difficulties as they provided insight into different elements of a student's school experience. These three codes were social

awareness, emotional reactions, and self-reflection. These codes were all important components that allow a student to be successful in their school day, and therefore felt were necessary to examine. The information that was being analyzed throughout all types of data including one on one student interviews, survey responses, and behaviour observations and tracking were all able to connect with the codes or categories I chose to use. Each piece of data collected was able to be grouped into at least one of the three categories listed. I then used deductive coding after all data had been collected, to determine if there were underlying patterns that could connect to students' experiences even deeper (Xu & Zammit, 2020). By taking the qualitative data collected, I was able to colour code different comments that were being made or observed to bring light to three themes which included seeking an adult for support, competitiveness, and consistency.

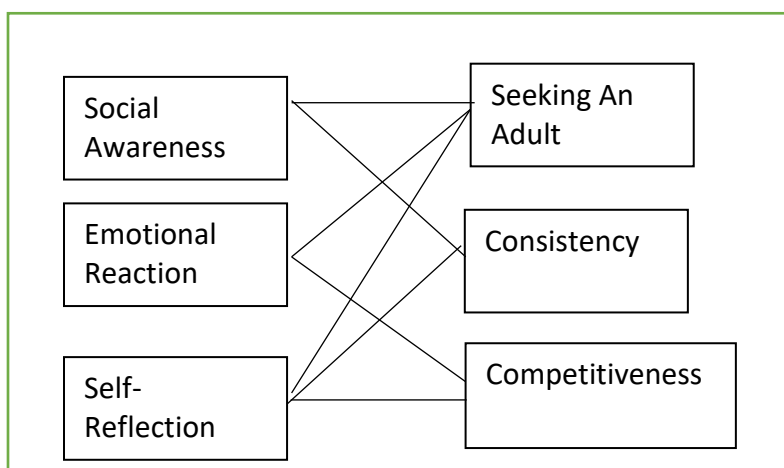
These latent themes were developed through my data sets which included behaviours such as difficulty with peers resulting in crying or yelling outbursts, interruptions in the school day due to assemblies and class expectations, increases noted in behaviours on days where running was not allocated in the day, frustration with teachers, as well as tattling or showing attention seeking behaviours when problems occurred. These, among many other underlying reactions or observations noticed, allowed me to gather similarities using coding of common words or phrases used by myself as the observer, the students' responses, or throughout the student survey questionnaires to reveal the themes discussed above.

Connections to these themes were noticed in all aspects of the data collection qualitatively, specifically including observed noted behaviours, student questionnaires, student surveys, and student randomized interviews (Appendix I). Although some more prevalent than others, the patterns that were uncovered during the analysis process are necessary to highlight in our discussion, as it relates to the students' outcomes over the 8-week study. The themes

established can be viewed in a thematic map in Figure 1.

The thematic map shows that based on the initial three codes used for this research, which are listed on the left side of Figure 1, at least one or more themes can be connected throughout the varying types of data collection that were done. The purpose behind presenting this figure, is to share greater evidence in the understanding of how students are impacted by their negative behaviours. All the negative behaviours shown in this study, connected to each other in one way or another, based on the themes, and therefore are determinants of future implications regarding a student's success in school.

Figure 1- Thematic Map- Main Coding to Themes Connections



Throughout the data collection period, one of the themes that was observed was students' ability to seek out an adult about what they were feeling. This was noticed in both the pre-observed negative behaviours as well as during the implemented running program observations. When issues arose, students seemed to want to discuss with an adult, ways to assist them in overcoming the various struggles that they were facing. The next theme was that many of the

students presented an observable level of competitiveness throughout the research study. The competitiveness was at times towards peers that they wanted to do better than (more laps, more rewards, etc.), but also competitiveness within themselves, not only in success they had on the running program but also in their ability to handle their emotions or struggles, behaviourally or socially in a responsible, respectful, or effective way. This was noticed in a variety of ways, specifically in my anecdotal conversations with students regarding their issues with peers as well as was noted by some students in the randomized student questionnaires that were presented throughout the study. The final theme that came to light was the effects consistency had on the students' emotions and therefore self-regulation success. The more consistent the running program was, not only what time during the day students would run but also how long they would be given to run each day, was important to note. This can be seen in Appendix G, where a 4-week schedule of the runs as well as the number of negative behaviours that occurred, are listed. This data provides further insight into students' reactions when the running was interrupted. This shows that when students did not get to run, or the days on which the run was put off until later in the afternoon, the more likely negative behaviours were observed.

Quantitative Results

Observed Behaviours

Two different tests were used to analyze the quantitative data from this research. The first paired sample T-test was used to determine the difference in students' negative behaviours during the non-running observational period compared with the number of negative behaviours presented during the daily running intervention.

There was no statistically significant difference observed between pre-running ($M=0.8571$, $SD=2.15141$) and post-running ($M=0.5238$, $SD=0.87287$, $t(20)=0.941$, $P>0.05$). A detailed analysis including the mean and standard deviations, is presented in Table 2. A one-way repeated measures MANOVA was conducted to compare students' negative behaviours at the two different time points (pre-running and post-running) which can be seen in Table 3. There was no statistically significant difference effect for pre-running and post-running (Wilks' Lambda = 0.358, $F(1,20)=0.886$, $P=0.958$ multivariate partial eta squared = 0.042).

Table 2: Paired T Test results for mean and standard deviation from pre-test to post-test for total behaviours observed.

Paired Samples Statistics- Pre & Post Observed Behaviours

		Mean	N	Std. Deviation
Pair 1	Pre- Running Behaviours	.8571	21	2.15141
	Post- Running Behaviours	.5238	21	.87287

Table 3: Multivariate Test contrasting difference – Measuring effect size from pre-behaviour to post-behaviour.

Multivariate Tests ^a						
Effect	Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Wilks' Lambda	.958	.886 ^b	1.000	20.000	.358	.042

The behaviours that were tracked during both the non-running and running days, were negative behaviours such as crying, yelling, physical outbursts or violence, withdrawing, and using inappropriate language towards staff or students. These negative behaviours are presented in Table 4 along with the coding used to track and organize the behaviours. A section of the data collection taken is presented in Table 5 to allow for a clearer understanding of the frequency and process in tracking and accounting for the various behaviours being witnessed. It was used to see if there was a difference in the number of behaviours that were tracked during students' typical school days, compared to when students were running every day. An Excel spreadsheet was used throughout the days when behaviours would be observed and tracked which is provided for a more detailed understanding in Appendix G.

Although not significant, the negative behaviours pre and post running implementation did show a difference in students' ability to overcome struggles in a faster timeframe. On average, when negative behaviours were presented prior to the running program being implemented, students' outbursts lasted an average of 22.67 minutes. The average amount of time that students struggled with their negative behaviours once the running program had started, was 16.67 minutes. A breakdown of the behaviour times pre running and during running intervention, are shared in Appendix G, where the average amount of times noted above, can be calculated.

Table 4: Behaviours Tracking Process and Coding

Behaviour	Coding Used While Tracking
Crying	CR
Yelling	Y
Physical/ Violent	P
Withdraw/ Ignore or Escape	W
Inappropriate Language	L

TMMS-24 Student Survey-

The next form of quantitative data that was collected was the student survey, Trait Meta Mood Scale 24 also known as TMMS-24 (Salovey, et al. 1995). To analyze the data, the survey questions were broken down into three sections. The three sections or categories were Emotional Attention, Emotional Clarity, and Emotional Repair (Salovey, et al. 1995).

A paired sample T test was conducted on the Trait Meta Mood Scale-24 (Salovey, et al. 1995) student survey results, to determine if there was any difference on student's survey responses after the running program had been implemented.

There was a statistically significant difference observed between pre-survey ($M=3.3823$, $SD=0.42370$) and post-survey ($M=3.7402$, $SD=0.41077$, $t(16)= -3.002$, $P<0.05$) on all categories combined. The detailed analysis including the mean and standard deviation, are presented in Table 6. A one-way repeated measures MANOVA was conducted to compare students' survey responses at the two different time points (pre-running and post-running). There was a statistically significant effect for pre-running and post-running results (Wilks' Lambda= 0.008, $F(1,16)= 9.012$, $P=0.640$ multivariate partial eta squared= 0.360). This can be viewed in Table 7.

Table 6: Paired T Test results for mean and standard deviation from pre-survey to post-survey answers presented in TMMS-24.**Paired Samples Statistics- Pre & Post TMMS-24 Student Survey**

		Mean	N	Std. Deviation
Pair 1	Pre- Survey	3.3823	17	.42370
	Post-Survey	3.7402	17	.41077

Table 7: Multivariate Test contrasting difference – Measuring effect size from pre-survey to post-survey.

Multivariate Tests ^a						
Effect	Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Wilks' Lambda	.640	9.012b	1.000	16.000	.008	.360

The information presented in the survey focused on the three areas of emotions mentioned above which include emotional attention, emotional clarity, and emotional repair. This information, including the average student response in each category, can be viewed in Table 8. The averages shared were gathered based on students selecting a 1-5 response to each question asked, (1) never, (2) rarely, (3) sometimes, (4) fairly frequently, (5) very frequently (Canabate et al. 2020). Based on the partial eta squared=0.360, the results show a large effect size meaning that the difference between the two surveys has a practical significance and is worth noting as it represents an impact or change in results pre and post survey due to the intervention done (Cohen, 1988).

Table 8: A breakdown of the survey responses pre and post running intervention.

Survey Category	Pre-Running Intervention	Post-Running Intervention
Emotional Attention	3.21	3.4
Emotional Clarity	3.39	3.71
Emotional Repair	3.36	3.87

When analyzing Table 8, it is evident that the students were improving in their emotional capacity and reflectiveness after the running program had been implemented.

Throughout the 24 questions presented, each question connected to one of the three mentioned themes discussed earlier in this chapter. The results of the student survey data collection in relation to the themes, can be seen in more detail in Appendix G.

With there being a statistically significant difference between pre survey results and post running program survey results, there were no significant differences between the specific categories presented, more an overall survey difference. Therefore, it is understood that although the findings are significant, the combined data presented as such are an overall account, not category specific. Therefore, we are unable to say the emotional clarity, for example saw significant difference between the two pre and post survey responses. To have a greater understanding of the three categories and how they were impacted between pre and post survey findings, please refer to Table 8.

Qualitative Results

Student Questionnaire

The students' questionnaire responses initially provided some specific examples of their struggles with detailed explanations. For example, one student wrote "I got mad at my friend because he didn't let me use the ball, so I kicked it far way." This response, along with others,

offered insight into what the student had experienced as well as how they handled it. Table 9 provides a portion of the data taken from these questionnaires and how they connected to the themes throughout this research.

Table 9: A portion of the student questionnaire data that was collected along with the themes that they connected to.

Question	Response	Theme Connection
How have you been feeling over the last couple of days?	-Sad sometimes -Good -Happy most of the time -Sad because my friends aren't nice to me -Fine	
Have you had any struggles with friends, classmates, or students on the playground? If so, what was it about and how did you handle it?	-No -Yes, my friend said I couldn't play soccer because I wasn't good -"Student" was annoying me in class and I told them to stop but they didn't so I told the teacher -No -Sad because my friend wasn't at school, so I played by myself at recess -My friend said that my art was ugly	-seeking an adult -competitiveness -consistency -competitiveness
Have you had any moments of frustration, or sadness? If so, why did you feel this way and how did you handle it?	-Some -Sad because my sister was sick -Sad because I have no one to play with- I just played by myself -Frustrated because I did bad on my math quiz. I threw it in the garbage, but I am going to re-do it -Frustrated because I don't like the science project and don't want to do it so I told my teacher and SEA helped me	-competitiveness -seeking an adult

Table 10: A portion of survey questions provided within the categories of emotion, along with pre and post results, and theme connections.

Survey Category	Statements	Pre-Running Responses	Post-Running Responses	Theme Connection
Emotional Attention	I pay a lot of attention to my feelings. I am usually very conscious of what I feel. I usually spend time thinking about my emotions.	3.21	3.4	Competitiveness Consistent
Emotional Repair	My feelings are clear to me. I can usually define my feelings. I can always say how I feel.	3.39	3.71	Consistency
Emotional Clarity	Even when I feel sad, I try to think about pleasant things. I try to have positive thoughts when I feel bad. When I am angry, I try to change my state of mind.	3.67	3.87	Competitiveness

Informal Interviews

The next form of qualitative data that was used was informal interviews with students that had experienced a struggle. A sample of the responses from these informal student interviews is presented in Table 11.

Table 11: A portion of the student one on one interviews in connection to the themes presented.

Pre or Post	Behaviour	Time Frame	Question	Response	Theme Connection
Pre	Crying	45 min	How are you feeling?	I'm mad. "Student A" was following me on the playground and wouldn't leave me alone. I asked a duty and they said to ignore them, but they didn't stop.	Seek an adult
Pre	Withdrawal	25 min	Why did you leave the class?	The math is stupid. It's too hard and I don't want to do it. "Student" said it's easy but it's really hard.	Competitiveness
Pre	Withdrawal/ Yelling	30 min	How are you doing?	Not good. I don't want to be in that group, I hate "Student". They are annoying. My other friends are together and I want to be with them.	Competitiveness
Pre	Withdrawal	45 min	What's going on? Why do you have your head on your desk?	I'm tired. I had a bad sleep and I don't want to be here.	Consistency
Post	Crying	10 min	What is wrong?	I miss my mom. She went away for a week and I miss her.	Consistency
Post	Crying	5 min	What is going on?	"Student" said she wanted space and didn't want me to play with them at lunch. I had no one to play with. I asked a supervisor and they said I could walk around with them.	Seek an adult

There was a clear difference in the way students were handling the situations and how quickly they were able to bounce back into a seemingly healthy and stable mindset (Table 11). These differences show that some beneficial change was made with students' negative behaviours. With a potentially longer study, a higher significance and therefore evidence of the benefits of increased physical activity, can be made.

Chapter 5

Discussion

This next chapter discusses the results presented in the previous chapter based on the data that was collected and analyzed and the connections that can be made with past research that has been done on children's social and emotional abilities in linking to physical activity. This study was done to see if implementing more physical activity into student's school days, in this specific case a daily running program, would affect students social and emotional negative behaviours. With 22 participants running every day for four out of the eight-week program, behaviours were recorded to determine if there was any impact. This research was specifically designed to see not only if the number of behaviours were decreased, but also if the actual behaviours that were presented were shortened when there was more physical activity provided in their day and if the emotional connections to struggles improved.

Based on what I have seen in schools throughout the past 12 years in education, I have noticed how social awareness is a crucial factor in a child's school experience, as much of what they do in a day is done with peers. These peers will respond in various ways throughout the years based on other children's behaviours, and depending on the behaviours, could result in judgement, exclusion, or unkindness. These responses could impact a child's enjoyment of school, as well as confidence within themselves. Due to seeing this pattern with students who struggle, only encouraged me further to develop a research project that would potentially assist students in limiting their emotional outbursts, ultimately benefiting their social interactions and acceptance by their peers.

The inability to regulate emotional reactions at a certain age is detrimental to a child being able to build relationships and problem solve. If they can self-regulate and therefore

control their emotional reactions to situations, the more capable they may be of building successful relationships. These relationships again determine much of a child's enjoyment during their school years.

Based on the findings, there was a positive association between students' behaviours being affected by having daily running implemented into students' school day. This is presented in Table 11 where a decrease in the amount of time students' negative behaviours lasted for is evident when comparing pre and post running observations. This results in beneficial outcomes, with both the number of behaviours observed (Appendix G) as well as the emotional connections and development shown (Table 11). These beneficial outcomes were evident not only in the quantitative data, but also in the qualitative data findings. The more strongly based evidence was reported in the qualitative data taken, especially with student interviews, where many noted their ability to overcome the issue faster. Comments noted by students once the running program was started, include insight such as "I'm just going to take a few breaths and I'll be fine", or "I just walked away because they were making me mad, and now I'm ready to play". These comments were made by students during informal interviews, once an issue had been observed. Along with this qualitative data, the amount of time that students took to regulate after a negative behaviour had occurred, was noticed (Table 11). This information is motivating in understanding that although the number of behaviours that were tracked pre and post running program did not suggest a statistically significant outcome, there was a clear decrease in the amount of time that these behaviours were lasting.

Implementing daily running into students' school day did impact their social and emotional struggles which is supported by the findings. Although, the findings did not present a statistically significant difference when it came to the actual number of behaviours observed

during the non-running versus running implementation. There was, however, a statistically significant difference in the emotional survey responses that were noted during pre and post implemented running (Table 6). The continued benefits that were explored from both the quantitative and qualitative findings, included students' ability to overcome struggles they experienced. These findings showed a positive consistency in which students showed greater self-reflection when answering emotional connection survey questions about themselves. The length of time each episode or negative behaviour lasted was also impacted and showed increased improvement. These findings showed that a potential difference in students' ability to overcome their struggles sooner due to the additional physical activity they were experiencing, was possible. The increased physical activity therefore can be said to be the root of the improved behaviours in this study as the physical activity allowed students the energy outlet they potentially needed to react to experiences more appropriately. This energy outlet may have also allowed students' the reflective time to consider their actions or reactions and act in more appropriate and beneficial ways. Savina (2021), offered research that supported this by showing her findings on the importance of students requiring strong inhibition to overcome challenging moments. The mixed methods findings suggest that the daily running program did have an impact on students' ability to self-regulate more readily, and to handle their social and emotional struggles in shorter and more beneficial ways. This could be seen as growth in their inhibition allowing them to overcome challenging situations more effectively. The behaviours observed were decreased, and the amount of time students required to come back to a healthy mindset was also decreased. Students' self-reflections on their emotional states were also shown to improve once the daily running was implemented into their school day. This was evident based on the TMMS-24 survey findings shared in Table 10.

Self-reflection is an essential part of a child's success, as being able to self-reflect on their social interactions and emotional reactions will encourage change and growth in who they are and their development throughout their lives. Chang (2019) did research on students' ability to self-reflect on their learning and the benefits that were developed. It was found that when students shared their self-reflections with peers, the more effective they were in overcoming areas of struggle they may have experienced. Self-reflection sharing also strengthened peer relationships as they were able to connect and relate to each other more deeply, as well as provided fellow classmates with possible solutions for future struggles (Change, 2019). The connections made with Chang's (2019) use of self-reflection provides an additional element that could be implemented when working with students in the future with their self-reflective processes.

When students were given the time necessary to allow for increased physical expenditure, in this case running, with an average amount of time of 15 minutes per day, the less likely they were to struggle with outward, distracting, or negative behaviours. Howie et al, (2015) discuss this as an important aspect of a child's school day. This is accurate based on the findings as it was seen throughout the data samples, that when students were provided daily runs that lasted 15 minutes or more, results showed fewer negative behaviours throughout those days compared to when runs did not occur or were shortened. This information is important to understand as the negative impacts associated with students not having enough physical activity in their school day, the more detrimental to the success of schools, not only students but staff and families alike.

Seeking an adult came up as a theme, as many of the observations mentioned students asking or looking for support from the teacher or other staff members in the area to handle the situation. These occurrences were not only if a child was physically hurt or overwhelmed, but

also if they were having an issue with a peer and required support to deal with the problem. It was observed using the behaviour data collection spreadsheet (Appendix J), that 93% of the time, students asked for support or came to tell an adult about a situation that initiated negative behaviours. Based on this observation, the number of times that students sought out an adult for support did not differ prior to the running program implementation compared to when it was being completed by students. It was therefore noted as a natural response to students' struggles as there was no evidence to say that the running impacted this reaction. The understanding of more support from adults needed in schools is important and as Greenspan, et al. (2022), conclude, the more adult connections and supports that can be offered, such as counselors and youth care professionals, the more students can be provided the tools and support necessary to overcome difficult circumstances, in and outside of school. This connects with the findings of this study, in that most students' struggles required the support of an adult.

The idea of competitiveness as a theme was a surprise, as the program was implemented as an individual running experience, eliminating competitive issues with peers. Although done independently, the running program still showed some competitiveness among many students. Although the idea of competing against fellow classmates on getting in more laps or rewards could have been expected for some students, the level of students' apparent competitiveness within themselves to work on their emotions was interesting to uncover. This was interesting to see as the implemented running was meant to offer students time to not only burn energy, but also have time to themselves to process their thoughts during the 15–20-minute block of time each day. These outcomes could mean that running allowed students the ability to reflect on their emotions which created competitiveness and desire to want to do better within themselves. The connections to competitiveness are presented in Table 5, where a sample of the observable

behaviours are shared, as well as in Table 10 where the informal interviews and student questionnaire data is shared. This is important, as although not an assumed characteristic regarding students social and emotional negative behaviours, perhaps the aspect of competitiveness in students, with peers or within themselves, could be a larger component to students' success than many educators realize. To understand if the competitiveness that came from the running program fed into students' personal competitiveness, would require more research to see how competitiveness throughout one area of a child's life can potentially seep into more personal areas as well. The information provided regarding students showing competitiveness within themselves, was found in various comments that were made such as "I'm frustrated but I'm trying to take breaths instead of getting mad", or another saying, "I'm tired of my friends saying I'm a crybaby, so I'm walking away until I'm calm". These comments show that students were looking to better their behaviours and therefore we can say perhaps compete against their old reactional patterns. Shimotsu-Dariol, Mansson & Myers (2012) looked at students' competitiveness in their learning, and discussed how students who typically are highly academic also work to outperform themselves, ultimately working towards personal growth and improvement. The idea of students wanting to outperform themselves supports what was seen in this research study as students showed a reflective capacity where the desire to do better with their actions was evident based on the qualitative data that was collected. Shimotsi-Dariol et al. (2012) found that students had motive for their competitiveness, and that was to strengthen or establish positive relationships with their instructors. Students potentially feeling the need to impress or be their best for their teacher's approval is intriguing. Although the qualitative data did not suggest this connection in teacher approval, it is interesting to consider as a factor for the theme of competitiveness that was uncovered.

Although no explicit teaching was done in terms of assisting students in overcoming their frustrations in a responsible or respectful way, students may have been influenced by other outside sources to develop this understanding which may have motivated a competitiveness within themselves to do better. Another source that could have impacted this change in students, beyond the noted potential of teacher approval, includes different forms of learning skills, such as conflict resolution. This could have been done through school staff interactions, parent conversations, or perhaps through TV or video presentations. Due to the listed potential interventions that could have occurred to inspire these comments from students, I am unable to say the running was at all involved.

The final theme to note was the impact consistency seemed to have on students' behaviour. Knisel, et al. (2017) acknowledged that schools can provide consistency for students as it is such a large aspect of a child's life. Although the findings showed that more negative behaviours were observed when a student's length of time to run was shortened or cancelled all together some days due to various reasons (Appendix G), not enough was observed to determine if these interruptions were the cause of the decrease in behaviours. It was interesting, however, how the routine and expectations that students placed on the daily runs changed their reactions to scenarios throughout the day. For example, an emotional reaction from a student who consistently presented negative behaviours, was able to come back to a calm mindset when the full 15 minutes run was completed within the first hour of the day. When the run was moved to a later time in the day or excluded from the daily schedule all together, those same students showed increases in their behaviours and the amount of time required to calm them down to a healthy mindset. These negative behavioural reactions can be seen in Appendix G where the length of run time as well as length of time the negative behaviours lasted, are shared. When the

run times were not consistent, the students' energy change and demeanor appeared to be negatively impacted. This was eye opening in my research as it made me question the impact of time and consistency for children. When educators provide nurturing, supportive, and consistent classroom environments, children can build confidence, and the consistency provided is linked to student's negative behaviour and academic gains throughout their primary years (Brock, Curby & Cannell-Cordier, 2018). Although many educators may implement physical activity into their day, perhaps realizing that having that physical activity be consistent, could significantly alter a student's school experience. The understanding that such a small aspect of a child's day could potentially impact them so greatly was intriguing. Without further investigation, I am not able to determine if the increased behaviours were due to frustration about not getting in the number of laps students wanted, or because they wanted to run instead of a less desirable task. The aspect of consistency was a clear tool needed to help some students lessen their negative reactions or behaviours throughout the day or abandon them altogether.

When looking at the data both quantitatively (Appendix G) and qualitatively (Appendix J), students showed changes in not only their self-regulation, but also their reflectiveness of problems that they experienced which was evident based on the survey question responses completed after the 8-week running program had concluded. This information can be found in Table 8, where the pre and post survey question responses are presented. Although no specific training or teaching was presented to students to impact the potential change in student's reflectiveness of behaviours, a clear link was made regarding their change in cognition in terms of emotional development. When referring to Table 8, it was evident that the responses to the survey prior to the running program, compared to after the running program, had changed. With no other change being made to students' school day throughout the time of this study, it can be

suggested that the change in survey responses may have been due to students' ability to self-regulate more readily with the running, and consistency they were being offered. Therefore, students were potentially more reflective of their emotions, which is what the survey sought to uncover. As Brock et al. (2018) found, consistency in routine, in this case the 15-minute morning runs, may have led to students finding greater confidence and therefore an ability to reflect on their actions, lessening the negative behaviours that were being observed. With the project seeking potential beneficial outcomes for students' social and emotional behaviour changes, based on the running implementation, the aspect of self-reflection was a secondary factor.

Regardless of the intrigue that the survey response changes showed, the ultimate focus and success was presenting effective evidence, supporting what other researchers had shared (Bean, et al. 2016; Biddle, et al. 2015; Campbell, et al. 2002; Canabate, et al. 2020 Greenspan, et al. 2022; López-Gil, et al. 2020; Malik and Tyagi, 2021; Reid, et al. 2015; Savina, 2021; Vasilopoulos and Ellefson, 2021), in that by implementing daily physical activities into student's school day, the better off my students would be in regard to their social and emotional or self-regulation abilities.

To conclude, the final chapter will share an overview of the main objective of this study, the results, and its connections to future education, limitations, and how this research is important to consider when looking at students' negative behavioural struggles and how physical activity can potentially improve their experiences.

Chapter 6

Conclusion

With increases in negative behaviours being recognized in schools (Xu et al., 2018; Kern & Clemens, 2007; Primary Sources, 2012) over recent years, students and teachers' experiences including learning and relationships, are being negatively impacted. Teachers are burnt out and leaving the profession more frequently than educators in the past (Xu, et al., 2018) and students are struggling to cope with their social and emotional experiences in positive ways that don't impact their learning and mental health (Kern & Clemens, 2007). This research looked to determine if by implementing a physical outlet, in this case a daily running program, it would assist students in overcoming difficult behaviours and allow for better social and emotional experiences.

The conclusions of this research indicate that by having grade 4 and 5 students participate in daily runs of approximately 15 minutes, students are better able to self-regulate in more appropriate ways and within a shortened timeframe. It also showed that students' self-reflection of their emotions improved based on qualitative findings revealed from the student emotional response questionnaires.

Once the running program was implemented, less daily negative behaviours were observed. These findings fit with past research such as that done by López-Gil, et al. (2020) which looked at children's beneficial outcomes associated with daily physical activity.

Findings from this research also showed improved emotional connections made based on data analyzed from the TMMS-24 survey. These findings correspond with the benefits shown in the research done by Canabate et al. (2020) which found improvements in students' self-regulation and emotional intelligence after various forms of increased physical activity was

implemented into the participants school day. These conclusions show the benefits associated with a daily running program and provide evidence as to how students in grade 4 and 5 can be assisted in their social and emotional struggles experienced in school.

There was a clear difference in the way students were handling the situations and how quickly they were able to bounce back into a seemingly healthy and stable mindset (Table 11). These differences show that some beneficial change was made with student negative behaviours. With a potentially longer study, a higher significance and therefore evidence of the benefits of increased physical activity, can be made.

Although this research was done using multiple types of data collection including both quantitative and qualitative methods, the ability for there to be limitations to the research is important to acknowledge. This research does not necessarily indicate that there were less student issues, it only shows that there were fewer outward negative behaviours presented when there was an issue with this group of students. For example, there were less social and emotional issues presented by observations of crying, yelling, physical outbursts, or harmful language, but that does not take away the potential that students were still having issues, but they instead were able to handle those struggles in more appropriate ways. The students' ability to overcome struggles in a more positive way could have multiple reasons for their success. One possibility may have been by having conversations with adults, either parents or teachers, where insight regarding problem solving strategies and friendship skills could have been shared. There could potentially have been improved students' abilities to solve issues in more beneficial ways due to being more physically fatigued and therefore more capable of calming their minds and bodies and reacting to a scenario in a more effective way. More research specific to students' change in handling difficult situations at school after physical activity would need to be done to show clear

and consistent outcomes. One study, however, done by Lynch (2019), looked at how physical activity influences children's well-being. The research specifically looked at students' sense of belonging within their schools, but it was noted throughout the participants responses from the qualitative data, that students felt more relaxed after physical activity and were able to concentrate on their learning more effectively (Lynch 2019). Although this was not the focus of my research, there was positive change in students' behaviours and demeanor after the running had been completed, linking what Lynch (2019) found in the study on students' well-being. It would be interesting to see what effect the running would have had on students if the research study continued over a longer period of time, both with the number of negative behaviours observed but also if the number of minutes that the behaviours lasted for, were decreased further. This research was also done with grade four and five students and would need to be investigated further with varying ages to see if the results would be similar in other grade or ages groups.

It can be noticed that throughout the 4 weeks of running implementation, the ability to be consistent with the run times each day was difficult. Appendix G shows the specific times that the runs occurred throughout the 4 weeks. The struggle in having more consistency in the time of day the runs occurred were due to various factors discussed in previous chapters and is considered a limitation as more consistent run times could have impacted students' even further than what was found in this research study. One of the factors that was shared by Larsen, et al. (2013) and Kelly, et al. (2019), in that much of the improvement in students social, emotional, and physical development could be done in schools, and educators may require further professional development opportunities to gain the skills to provide students with the greatest learning environments for their physical and mental well-being. More professional development, as mentioned in this research, could offer educators an ability to improve teaching aspects such

as classroom management, and organized daily schedules. This component could assist in bringing more consistency to students' school day, and therefore improve students' physical and mental well-being.

Other limitations could have been in terms of the student surveys that were presented both pre and post intervention. Students were read the survey aloud both times to ensure there was limited misunderstanding for those who may have lower reading abilities and each question was briefly described to ensure students understood what the question was asking. Although this step was taken to assist in the possibility of misunderstanding, there is no guarantee that the information shared by the students was accurate based on their understanding of what was being asked. To allow greater accuracy within the survey data collection step, a possible one on one survey could have been established if time permitted. This would have ensured the students could have had the questions explained more in depth if necessary. To understand further, the connections and benefits that came from the running regarding self-reflection, more research specifically targeting changes in thought process would be necessary. More research would be required to determine if there were no other factors present during the 8-week study that influenced this change in student responses.

The last limitation to note was the time of year that the research was carried out. The data collection period spanned over two months. The time frame in which the data was taken is important to consider as a possible limitation. From March to May data was collected. The beginning of the data stage was observing behaviours during students' typical daily school experience. Although the running is a specific aspect that impacted students during the second stage of data collection, another factor that could be also noted as improving students' social and emotional abilities, was the weather. The weather in early March was drearier, with days of rain,

wind, and cold, compared with the later stage of data collection when students were running, the weather had naturally improved with the stages of the season, allowing for more sun and warmth. Research has shown that weather can be a determinant of peoples' mood and could be used as a potential in the changes of behaviours that were seen throughout the research (Denissen, Butalid, Penke, and van Aken, 2008). Weather affecting a person's mood is discussed by Denissen, et al (2008), in their research showing that sunlight was the main impact on peoples' levels of tiredness. Although the weather did not necessarily impact all students, the potential of some students being affected more positively with the better weather during the later part of the data collection period, the more potential there was in their mood and ability to be less tired and therefore possibly better able to overcome their struggles.

Although there are limitations within this research, it does not take away the results of showing positive differences and change with the running program being implemented. More research would be required over a longer time frame and during multiple times of the year to see if the weather was indeed a factor in the students' change in behaviour.

This research is inspiring as it provides evidence of how physical activity can benefit students in their social and emotional experiences, and how with more research, teachers could potentially be offering students running programs to better their overall school experiences. Although more needs to be done in the field to determine what other components may be required to ensure students are supported as much as possible, the evidence provided by this research is worth consideration by researchers in the future. By implementing daily running into a student's school day, an individual could possibly experience beneficial outcomes in their ability to self-regulate and therefore lessen any social and emotional issues they may experience.

References

- Bailey, R. (2006). Physical Education and Sport in Schools: A Review of Benefits and Outcomes. *Journal of School Health*, 76, 397-401. <https://doi.org/10.1111/j.1746-1561.2006.00132.x>
- Bean, Kendellen, K., & Forneris, T. (2016). Moving Beyond the Gym: Exploring Life Skill Transfer Within a Female Physical Activity-Based Life Skills Program. *Journal of Applied Sport Psychology*, 28(3), 274–290. <https://doi.org/10.1080/10413200.2015.1124155>
- Biddle, Gorely, T., Mutrie, N., Mutrie, P. N., & Gorely, T. (2015). *Psychology of physical activity : determinants, well-being and interventions* (Third edition). Routledge.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>
- Breheny, K., Adab, P., Passmore, S., Martin, J., Lancashire, E., Hemming, K., & Frew, E. (2018). A cluster randomised controlled trial evaluating the effectiveness and cost-effectiveness of the daily mile on childhood obesity and wellbeing; the Birmingham daily mile protocol. *BMC Public Health*, 18(1), 126–126. <https://doi.org/10.1186/s12889-017-5019-8>
- Bremer, E., Graham, J.D., Veldhuizen, S. *et al.* A program evaluation of an in-school daily physical activity initiative for children and youth. *BMC Public Health* **18**, 1023 (2018). <https://doi.org/10.1186/s12889-018-5943-2>
- British Columbia Curriculum. (2023). *Physical and Health Education*. <https://curriculum.gov.bc.ca/curriculum/physical-health-education>

Campbell, Eaton, W. O., & McKeen, N. A. (2002). Motor activity level and behavioural control in young children. *International Journal of Behavioral Development*, 26(4), 289–296.

<https://doi.org/10.1080/01650250143000166>

Cañabate, D., Santos, M., Rodríguez, D., Serra, T., & Colomer, J. (2020). Emotional Self-Regulation through Introjective Practices in Physical Education. *Education Sciences*, 10(8), 208. <https://doi.org/10.3390/educsci10080208>

Caspersen, C. J., Powell, K. E., & Christenson, G. M. (1985). Physical activity, exercise, and physical fitness: definitions and distinctions for health-related research. *Public health reports (Washington, D.C. : 1974)*, 100(2), 126–131.

Chesham, Booth, J. N., Sweeney, E. L., Ryde, G. C., Gorely, T., Brooks, N. E., & Moran, C. N.

(2018). The Daily Mile makes primary school children more active, less sedentary and improves their fitness and body composition: a quasi-experimental pilot study. *BMC Medicine*, 16(1), 64–64. <https://doi.org/10.1186/s12916-018-1049-z>

Clark, P. G. (2009). Reflecting on reflection in interprofessional education: Implications for theory and practice. *Journal of Interprofessional Care*, 23(3), 213–223. <https://doi-org.ezproxy.uwtsd.ac.uk/10.1080/13561820902877195>

Cohen D, Crabtree B. "Qualitative Research Guidelines Project." July

2006. <http://www.qualres.org/HomeInfo-3631.html>

Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum Associates, Publishers.

Communications (2022) *The importance of physical literacy, School District No. 83 (North Okanagan-Shuswap)*. Available at: <https://sd83.bc.ca/2022/05/03/the-importance-of->

physical literacy/#:~:text=%E2%80%9CWe%20know%20when%20we%20have,emotional%20wellbeing%2C%E2%80%9D%20states%20Paiement. (Accessed: 17 May 2023).

de Jonge, M., Slot-Heijs, J. J., Prins, R. G., & Singh, A. S. (2020). The Effect of The Daily Mile on Primary School Children's Aerobic Fitness Levels After 12 Weeks: A Controlled Trial. *International Journal of Environmental Research and Public Health*, 17(7), 2198–. <https://doi.org/10.3390/ijerph17072198>

Denissen, Butalid, L., Penke, L., & van Aken, M. A. G. (2008). The Effects of Weather on Daily Mood: A Multilevel Approach. *Emotion (Washington, D.C.)*, 8(5), 662–667. <https://doi.org/10.1037/a0013497>

Diaz, R. M., Winsler, A., Atencio, D. J., & Harbers, K. (1992). Mediation of self-regulation through the use of private speech. *International Journal of Cognitive Education and Mediated Learning*, 2, 155–167.

Dove, N., Wong, J., Gustafson, R., & Corneil, T. (2020). *Impact of School Closures on Learning, Child and Family Well-Being During the COVID-19 Pandemic*.

Dubinski, K. (2023, March 5). *Teachers, principals seeing more outbursts and less self-regulation, survey finds | CBC NewsK*. CBCnews. <https://www.cbc.ca/news/canada/london/teachers-principals-seeing-more-outbursts-and-less-self-regulation-survey-finds-1.6767674>

Fernandez-Berrocal, Extremera, N., & Ramos, N. (2004). Validity and Reliability of the Spanish Modified Version of the Trait Meta-Mood Scale. *Psychological Reports*, 94(3), 751–755. <https://doi.org/10.2466/pr0.94.3.751-755>

Fitness Finders. *Shaping America's Future*. (2008). Retrieved September 9, 2021, from

<https://www.fitnessfinders.net/about.asp>

Gabriel Y. (2018) Interpretation, Reflexivity and Imagination in Qualitative Research. In:

Ciesielska M., Jemielniak D. (eds) *Qualitative Methodologies in Organization*

Studies. Palgrave Macmillan, Cham. https://doi.org/10.1007/978-3-319-65217-7_8

Giles, Eddy, M. D., Brunyé, T. T., Urry, H. L., Graber, H. L., Barbour, R. L., Mahoney, C. R.,

Taylor, H. A., & Kanarek, R. B. (2018). Endurance Exercise Enhances Emotional

Valence and Emotion Regulation. *Frontiers in Human Neuroscience*, 12, 398–398.

<https://doi.org/10.3389/fnhum.2018.00398>

Glapa, Grzesiak, J., Laudanska-Krzeminska, I., Chin, M.-K., Edginton, C. R., Mok, M. M. C., &

Bronikowski, M. (2018). The Impact of Brain Breaks Classroom-Based Physical

Activities on Attitudes toward Physical Activity in Polish School Children in Third to

Fifth Grade. *International Journal of Environmental Research and Public Health*,

15(2), 368–. <https://doi.org/10.3390/ijerph15020368>

González-Prendes, A., & Resko, S. (2012). Cognitive-behavioral theory. In S. Ringel, & J.

Brandell (Eds.), *Trauma: Contemporary directions in theory, practice, and*

research (pp. 14-40). SAGE Publications, Inc.,

<https://www.doi.org/10.4135/9781452230597.n2>

Greenspan, Whitcomb, S. A., Santana, Z. A., Fefer, S., & Hayden, L. (2022). Social-emotional

learning and physical activity in schools: Practitioner perspectives and initial measurement

development. *Psychology in the Schools*, 59(9), 1906–1921.

<https://doi.org/10.1002/pits.22733>

Grossman, N., News, L., & News. (2019, February 22). *Greater Victoria teachers experienced more than 30 incidents of violence from students in one month*. Victoria News.

<https://www.vicnews.com/news/greater-victoria-teachers-experienced-more-than-30-incidents-of-violence-from-students-in-one-month/>

Healthy schools. School District No. 83 (North Okanagan-Shuswap). (2020, August 4).

<https://sd83.bc.ca/healthy-schools-self-regulation/>

Hesse-Biber, & Johnson, B. (Eds.). (2016). *The Oxford handbook of multimethod and mixed methods research inquiry*. Oxford University Press.

Howie EK, Schatz J, Pate RR. (2015). Acute Effects of Classroom Exercise Breaks on Executive Function and Math Performance: A Dose-Response Study. *Res Q Exerc Sport*. 2015;86(3):217-24. doi: 10.1080/02701367.2015.1039892. Epub 2015 May 26. PMID: 26009945.

Johnson, & Onwuegbuzie, A. J. (2004). Mixed Methods Research: A Research Paradigm Whose Time Has Come. *Educational Researcher*, 33(7), 14–26.

<https://doi.org/10.3102/0013189X033007014>

Jones, S. M., & Doolittle, E. J. (2017). Social and Emotional Learning: Introducing the Issue.

The Future of Children, 27(1), 3–11. <http://www.jstor.org/stable/44219018>

Kazdin, A. (1998). Conduct disorders. In R. J. Morris & T. R. Kratochwill (Eds.), *The practice of child therapy* (3rd ed., pp. 199–230). Boston, MA: Allyn and Bacon.

Kelly, Carpenter, D., Behrens, T. K., Field, J., Luna, C., Tucker, E., & Holeva-Eklund, W. M.

- (2019). Increasing Physical Activity in Schools: Strategies for School Health Practitioners. *Health Promotion Practice*, 20(5), 697–702.
<https://doi.org/10.1177/1524839919857983>
- Kelso's Choice. (2023). *Kelso's Choice. The Program*. <https://kelsoschoice.com/about/#program>
- Kern, L., & Clemens, N. H. (2007). Antecedent strategies to promote appropriate classroom behavior. *Psychology in the Schools*, 44(1), 65–75. <https://doi.org/10.1002/pits.20206>
- Kinsler, P. (2011). How to be causal. *Eur. J. Phy*, 32 (6), 1687.
- Knisel, Kantanista, A., Walter, A., Cabrera Rivas, C., Desai, C., Cañada, D., Simon, D., Lenz, E., Knisel, E., Laudanska-Krzeminska, I., Laudanska-Krzminska, I., Martínková, I. P., Martínková, I. P., Parry Martínková, I., Ketelhut, K., Kleiner, K., Bronikowska, M., Gonzáles Gross, M., Prill, M., ... Erdmann, R. (2017). *Health Promotion at School : Pedagogical Aspects and Practical Implications*. De Gruyter.
<https://doi.org/10.1515/9783110539592>
- Krauss, S. E. (2005). Research Paradigms and Meaning Making: A Primer. *The Qualitative Report*, 10(4), 758-770. <https://doi.org/10.46743/2160-3715/2005.1831>
- Larsen, Samdal, O., & Tjomsland, H. (2013). Physical Activity in Schools: A Qualitative Case Study of Eight Norwegian Schools' Experiences with the Implementation of a National Policy. *Health Education (Bradford, West Yorkshire, England)*, 113(1), 52–63.
<https://doi.org/10.1108/09654281311293637>
- Lloyd, M. (2023, April 11). *The Kids Are Not Alright: Growing concerns in B.C. elementary classrooms*. CityNews. <https://vancouver.citynews.ca/2023/04/11/the-kids-are-not-alright-part-1/>

Lobo, Y. B., & Winsler, A. (2006). The effects of creative dance and movement program on the social competence of Head Start pre- schoolers. *Social Development*, 15, 501–519

López-Gil, Oriol-Granado, X., Izquierdo, M., Ramírez-Vélez, R., Fernández-Vergara, O.,

Olloquequi, J., & García-Hermoso, A. (2020). Healthy Lifestyle Behaviors and Their Association with Self-Regulation in Chilean Children. *International Journal of Environmental Research and Public Health*, 17(16), 5676–.

<https://doi.org/10.3390/ijerph17165676>

Malik, Bansal, R., & Tyagi, A. (2021). *Impact and role of digital technologies in adolescent lives*

(Malik, R. Bansal, & A. Tyagi, Eds.). Information Science Reference. Palmer,

Donaldson, C., & Stough, C. (2002). Emotional intelligence and life satisfaction.

Personality and Individual Differences, 33(7), 1091–1100.

[https://doi.org/10.1016/S0191-8869\(01\)00215-X](https://doi.org/10.1016/S0191-8869(01)00215-X)

Mileage Club the #1 run club for Elementary schools. (2021). Retrieved 22 August 2021, from

<https://mileageclub.fitnessfinders.net/>

Mindup. (2023). *Mindup for Educators and Schools*. <https://mindup.org/mindup-for-schools/>

Mizuno, Tanaka, M., Fukuda, S., Imai-Matsumura, K., & Watanabe, Y. (2011). Relationship

between cognitive functions and prevalence of fatigue in elementary and junior high

school students. *Brain & Development (Tokyo. 1979)*, 33(6), 470–479.

<https://doi.org/10.1016/j.braindev.2010.08.012>

Moffitt, T. E., Arseneault, L., Belsky, D., Dickson, N., Hancox, R. J., Harrington, H., et al.

(2011). A gradient of childhood self- control predicts health, wealth, and public safety.

Proceedings of the National Academy of Sciences, 108(7), 2693–2698.

Morrow, D. (2013). Physical Education (Kinesiology). In *The Canadian Encyclopedia*.

Retrieved from <https://www.thecanadianencyclopedia.ca/en/article/physical-education-kinesiology>

Parsons, C. (Director). (2019). *Participant Observation*. [Video/DVD] Leicester, England: ShortCutsTV.

https://search.alexanderstreet.com/view/work/bibliographic_entity%7Cvideo_work%7C4132824

Pippi, Buratta, L., Germani, A., Fanelli, C. G., & Mazzeschi, C. (2020). Physical Activity Habits and Well-Being among 6-Year-Old Children: The “Improving Umbrian Kids’ Healthy Lifestyle”, an Uncontrolled Pilot Study Project. *International Journal of Environmental Research and Public Health*, 17(17), 6067–. <https://doi.org/10.3390/ijerph17176067>

Ponitz, McClelland, M. M., Matthews, J. S., & Morrison, F. J. (2009). A Structured Observation of Behavioral Self-Regulation and Its Contribution to Kindergarten Outcomes. *Developmental Psychology*, 45(3), 605–619. <https://doi.org/10.1037/a0015365>

Primary Sources. (2012). *Primary Sources: 2012 America’s Teachers on the Teaching Profession*. http://mediaroom.scholastic.com/files/ps_fullreport.pdf.

Prinsloo, P. & Rowe, M. (2015). Ethical considerations in using student data in an era of ‘big data’. In Kilfoil, W. (ed.) *Moving beyond the hype: A contextualised view of learning with technology in higher education*. Pretoria: Universities South Africa.

Reid, MacCormack, J., Cousins, S., & Freeman, J. G. (2015). Physical Activity, School Climate,

- and the Emotional Health of Adolescents: Findings from 2010 Canadian Health Behaviour in School-Aged Children (HBSC) Study. *School Mental Health*, 7(3), 224–234. <https://doi.org/10.1007/s12310-015-9150-3>
- Salovey, P., Mayer, J. D., Goldman, S. L., Turvey, C., & Palfai, T. P. (1995). Emotional attention, clarity, and repair: Exploring emotional intelligence using the Trait Meta-Mood Scale.
- Savina, E. Self-regulation in Preschool and Early Elementary Classrooms: Why It Is Important and How to Promote It. *Early Childhood Educ J* **49**, 493–501 (2021).
<https://doi.org/10.1007/s10643-020-01094-w>
- Shamnadh, M. & Anzari, A. (2019). Misbehavior of School Students in Classrooms-Main Causes and Effective Strategies to Manage It. *International Journal of Scientific Development and Research (IJSDR)*.
- Shimotsu-Dariol, Mansson, D. H., & Myers, S. A. (2012). Students' Academic Competitiveness and Their Involvement in the Learning Process. *Communication Research Reports*, 29(4), 310–319. <https://doi.org/10.1080/08824096.2012.723643>
- Simkus, J. (2023). *Convenience sampling: Definition, method and examples*. Simply Psychology.
<https://www.simplypsychology.org/convenience-sampling.html>
- Stelzer. (2005). Promoting Healthy Lifestyles: Prescriptions for Physical Educators. *Journal of Physical Education, Recreation & Dance*, 76(4), 26–29.
<https://doi.org/10.1080/07303084.2005.10608233>

Sullivan, L. M. (2008, March 4). *Repeated measures | circulation - Aha/ASA Journals*. Repeated Measures. <https://www.ahajournals.org/doi/10.1161/circulationaha.107.654350>

Sun, R. C., & Shek, D. T. (2012). Student classroom misbehavior: an exploratory study based on teachers' perceptions. *TheScientificWorldJournal*, 2012, 208907.
<https://doi.org/10.1100/2012/208907>

The Zones of Regulation. (2011-2023). *The Zones of Regulation. Schoolwide Implementation*.
<https://zonesofregulation.com/schoolwide-implementation1.html>

Tonge, Jones, R. A., & Okely, A. D. (2021). The relationship between educators' and children's physical activity and sedentary behaviour in early childhood education and care. *Journal of Science and Medicine in Sport*, 24(6), 580–584.
<https://doi.org/10.1016/j.jsams.2021.02.003>

Vasilopoulos, & Ellefson, M. R. (2021). Investigation of the associations between physical activity, self-regulation and educational outcomes in childhood. *PloS One*, 16(5), e0250984–e0250984. <https://doi.org/10.1371/journal.pone.0250984>

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Massachusetts: Harvard University Press.

Whitehead. M, (2010). *Physical Literacy : Throughout the Lifecourse: Vol. 1st ed*.
Routledge.

Xu, G., Strathearn, L., Liu, B., Yang, B., & Bao, W. (2018). Twenty-Year Trends in Diagnosed Attention-Deficit/Hyperactivity Disorder Among US Children and Adolescents, 1997-2016. *JAMA network open*, 1(4), e181471.
<https://doi.org/10.1001/jamanetworkopen.2018.1471>

Xu, & Zammit, K. (2020). *Applying Thematic Analysis to Education: A Hybrid Approach to*

Interpreting Data in Practitioner Research. *International Journal of Qualitative Methods*, 19, 160940692091881–. <https://doi.org/10.1177/1609406920918810>

Zohrabi. (2013). Mixed Method Research: Instruments, Validity, Reliability and Reporting Findings. *Theory and Practice in Language Studies*, 3(2), 254–. <https://doi.org/10.4304/tpls.3.2.254-262>

Appendices

Appendix A

Student Reflection

Name: _____

Date: _____

1) How have you been feeling over the last couple of days?

2) Have you had any struggles with friends, classmates, or students on the playground?
If so, what was it about and how did you handle it?

3) Have you had any moments of frustration, or sadness? If so, why did you feel this
way and how did you handle it?

Appendix B

Randomized Interview Questions

Name: _____

Date: _____

4) How have you been feeling over the last couple of days?

5) Have you had any struggles with friends, classmates, or students on the playground?
If so, what was it about and how did you handle it?

6) Have you had any moments of frustration, or sadness? If so, why did you feel this
way and how did you handle it?

Appendix C

Trait Meta-Mood Scale- 24

1	I pay a lot of attention to my feelings.	1	2	3	4	5
2	I am usually very conscious of what I feel.	1	2	3	4	5
3	I usually spend time thinking about my emotions.	1	2	3	4	5
4	I think my emotions and state of mind deserve to be paid attention to.	1	2	3	4	5
5	I allow my feelings to affect my thoughts.	1	2	3	4	5
6	I constantly think about my state of mind.	1	2	3	4	5
7	I often think about my feelings.	1	2	3	4	5
8	I pay a lot of attention to the way I feel.	1	2	3	4	5
9	My feelings are clear to me.	1	2	3	4	5
10	I can usually define my feelings.	1	2	3	4	5
11	I nearly always know how I feel.	1	2	3	4	5
12	I usually know how I feel about people.	1	2	3	4	5
13	I often become aware of my feelings in different situations.	1	2	3	4	5
14	I can always say how I feel.	1	2	3	4	5
15	I can sometimes say which emotions I am experiencing.	1	2	3	4	5
16	I can manage to understand my feelings.	1	2	3	4	5
17	I usually have an optimistic outlook, although I sometimes feel sad.	1	2	3	4	5
18	Even when I feel sad, I try to think about pleasant things.	1	2	3	4	5
19	When I am sad, I think about all life's pleasures.	1	2	3	4	5
20	I try to have positive thoughts even when I feel bad.	1	2	3	4	5
21	If I think about things too much and end up complicating them, I try to calm myself down.	1	2	3	4	5
22	I am concerned about having a good state of mind.	1	2	3	4	5
23	I have a lot of energy when I feel happy.	1	2	3	4	5
24	When I am angry, I try to change my state of mind.	1	2	3	4	5

Appendix D

*Authorization for Simonds Elementary to Serve in a research study for:
MA Physical Education, Sport and Physical Literacy, University of Wales Trinity St. David*

Project purpose:	The purpose of this study is to examine the effects on students social emotional behaviours with an implemented running program.
Researcher:	Jen Hansen
Phone number:	604-809-7944
Location of the study:	Simonds Elementary School
Supervising instructor:	Dr. Karen Sirna, University of Wales Trinity St. David sirnak@douglascollege.ca
Research question:	<i>What is the effect of an implemented running program on students social and emotional behaviours?</i>
Procedures:	Attain necessary approvals, observe, and track data based on daily social and emotional student struggles, before and during implemented daily running program throughout an 8 week time frame.
Time and duration:	8 weeks- October 18 th -December 10 th , 2021
Benefits of the study:	To determine adjustments that can be made in a teacher's physical education practice, to better engage all students for lifelong skills and enjoyment of physical education.
Persons with access to raw data:	Only the following people will have access to the raw data: Jen Hansen, [possibly Paul Trattle- school administrator if requested], Dr. Karen Sirna and Dr. Nalda Wainwright (research supervisors)
Raw data destruction dates	Any records with personal information will be kept for one year and destroyed by October 20 th , 2024.

I understand that participation in this project is voluntary, and I understand that a parent or guardian may withdraw his/her child from this study at any time by notifying the researcher.

Statement of confidentiality:

The participation of the students in this project is confidential. Only the researcher, collaborators, and supervising instructor will have access to the students' identities and to information that can be associated with their identities.

Please check the appropriate box below and sign the form:

- ☐ I give permission for my school to participate in this project. I understand that I will receive a signed copy of this consent form. I have read this form and understand it.
- ☐ I do not give permission for my school to participate in this project.

Signature of principal

Date

Appendix E

SIMONDS ELEMENTARY



Prifysgol Cymru
Y Drindod Dewi Sant
University of Wales
Trinity Saint David

MA Physical Education Sport and Physical

Literacy

Informed Consent

Authorization for a Minor to Serve as a Research Participant

October 1st, 2021

Dear Parents or Guardian,

I will be conducting a study in our classroom to determine students social and emotional well-being and growth with an implemented daily running program. This study is being done for completion of my Masters of Physical Education Sport and Physical Literacy certification, through the University of Wales Trinity St. David.

I am writing to ask permission to use the information I collect from your child during this process. Participation in this study involves only regular classroom activities. You may contact me at any time regarding your child's participation. My phone number is 604-530-2361. The principal of the school has approved this study.

The purpose of the study is to determine if by increasing students' physical activity throughout their school day, in this case a running program, will have effect on students social and emotional behaviours and well-being. The study will take place at Simonds Elementary and will last for 8 weeks. I will be implementing daily running sessions on top of our regular physical education classes, all the while collecting data on what is noticed with the implemented activity change. This data will be collected using a spreadsheet, as well as observational notes, student questionnaires regarding their emotional connections and understanding, randomly selected student interviews, as well as weekly students social and emotional reflections. During the study, I will collect various forms of information to determine whether adjusting said factors into our classroom routines, was successful.

Benefits of participating in this study include determining how to implement strategies and practices into students' school day to allow for a greater student school experience. Only I, Jen Hansen, potentially Paul Trattle (school administrator), as well as Dr. Karen Sirna (program supervisor) and Dr. Nalda Wainwright (program coordinator), will have access to the data collected in this study as well as to your child's identity and to information that can be associated to your child's identity. Any records with personal information on them will be kept for one year and destroyed by March 31, 2023.

Please check the appropriate box below and return this form to Jen Hansen.

- ☐ I give permission for my child's data to be used in this study. I understand that I will receive a signed copy of this consent form. I have read this form and understand it.
- ☐ I do not give permission for my child's data to be part of this project.

Student's name

Signature of parent/guardian

Date

Appendix F



PG2 / E1 FORM

APPLICATION FOR ETHICAL APPROVAL

In order for research to result in benefit and minimise risk of harm, it must be conducted ethically. A researcher may not be covered by the University's insurance if ethical approval has not been obtained prior to commencement.

The University follows the OECD Frascati manual definition of **research activity**: "creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications". As such this covers activities undertaken by members of staff, postgraduate research students, and both taught postgraduate and undergraduate students working on dissertations/projects.

The individual undertaking the research activity is known as the "principal researcher".

Ethical approval is not required for routine audits, performance reviews, quality assurance studies, testing within normal educational requirements, and literary or artistic criticism.

Please read the notes for guidance before completing ALL sections of the form.

This form must be completed and approved prior to undertaking any research activity. Please see Checklist for details of process for different categories of application.

Delete the Guidance Notes at the end of the form BEFORE submitting your application

SECTION A: About You (Principal Researcher)

1	Full Name:	Jennifer Hansen			
2	Tick all boxes which apply:	Member of staff:	☐	Honorary research fellow:	☐
3	Undergraduate Student	☐	Taught Postgraduate Student	☐	Postgraduate Research Student
					☒
4	Institute/Academic Discipline/Centre:	Institute of Management and Health			
5	Campus:	Carmarthen			
6	E-mail address:	2106719@student.uwtsd.ac.uk			
7	Contact Telephone Number:	604-809-7944			
For students:					

8	Student Number:	2106719
9	Programme of Study:	MA in Physical Education Sport and Physical Literacy
10	Director of Studies/Supervisor:	Nalda Wainwright & Karen Sirna

SECTION B: Approval for Research Activity

1	Has the research activity received approval in principle? (please check the Guidance Notes as to the appropriate approval process for different levels of research by different categories of individual)	YES	☒	NO	☐
				<i>Date</i>	
2	If Yes, please indicate source of approval (and date where known): <i>Approval in principle must be obtained from the relevant source prior to seeking ethical approval</i>	Research Degrees Committee	☐		
3		Institute Research Committee	☐		
4		Other (write in)	☒		Supervisor

SECTION C: Internal and External Ethical Guidance Materials

	Please list the core ethical guidance documents that have been referred to during the completion of this form (including any discipline-specific codes of research ethics, and also any specific ethical guidance relating to the proposed methodology). Please tick to confirm that your research proposal adheres to these codes and guidelines.				
1	<u>UWTSD Research Ethics & Integrity Code of Practice</u>				☒
2	UWTSD Research Data Management Policy				☒
3	<i>Canadian Tri council panel research ethics completion</i>				☒

SECTION D: External Collaborative Research Activity

1	Does the research activity involve collaborators outside of the University?	YES	☐	NO	☒
2	If Yes, please provide the name of the external organisation and name and contact details for the main contact person and confirmation this person has consented to their personal data being shared.as part of this collaboration.				
3	Institution				
4	Contact person name				
5	Contact person e-mail address				

6	Has this individual consented to sharing their details on this form?	YES	☐	NO	☐
7	Are you in receipt of a KESS scholarship?	YES	☐	NO	☐
8	Is your research externally funded	YES	☐	NO	☐
9	Are you specifically employed to undertake this research in either a paid or voluntary capacity?	Voluntary	YES	☐	NO
10		Employed	YES	☐	NO
11	Is the research being undertaken within an existing UWTSD Athrofa Professional Learning Partnership (APLP)	If YES then the permission question below does not need to be answered.	YES	☐	NO
12	Permission to undertake the research has been provided by the partner organisation	(If YES attach copy) If NO the application cannot continue	YES	☐	NO

Where research activity is carried out in collaboration with an external organisation

13	Does this organisation have its own ethics approval system?	YES	☐	NO	☒
14	If Yes, please attach a copy of any final approval (or interim approval) from the organisation				

SECTION E: Details of Research Activity

1	Indicative title:	An Investigation into the effects of a daily running program on students social and emotional regulation		
2	Proposed start date of your research (not your course start date):	Oct. 1 st , 2021	Proposed end date:	Oct. 1 st , 2023
3	Introduction to the Research (maximum 300 words) Ensure that you write for a <u>Non-Specialist Audience</u> when outlining your response to the three points below: • Purpose of Research Activity • Proposed Research Question • Aims of Research Activity • Objectives of Research Activity Demonstrate, briefly, how <u>Existing Research</u> has informed the proposed activity and explain • What the research activity will add to the body of knowledge • How it addresses an area of importance.			
4	Purpose of Research Activity To determine if that by allowing an energy outlet for students in the form of increased physical activity, in this case a daily running program, students may be given the necessary outlet to regulate in a healthy and productive way.			

	(this box should expand as you type)
5	Research Question What is the effect of an implemented daily running program on students social and emotional behaviours? (this box should expand as you type)
6	Aims of Research Activity To look at the physical activity in our schools and to go deeper by looking at the mental health components associated. (this box should expand as you type)
7	Objectives of Research Activity To uncover if the social and emotional behaviours of students are impacted by a daily running program. (this box should expand as you type)
8	Proposed methods (maximum 600 words) Using a mixed method approach, data will be collected on a spreadsheet to determine changes in social and emotional student experiences. A student pre and post-test questionnaire will be presented (Trait-Meta-Mood-Scale 2). Two weekly student social and emotional reflections will be collected for qualitative data, and random interviews with questions to uncover a deeper understanding of student's emotional connections and experiences will be used. The SPSS program will be used for all quantitative findings, and NVIVO for the qualitative sections. Data will be collected during the first month of the study, with students participating in typical daily school activities, and then be observed over the second month while daily runs are being implemented. Students will complete the scale mentioned above at the beginning of the first month as well as at the end of the second month. The 2 weekly reflections will be presented throughout every week of the study, and randomized interviews will be completed approximately 4-5 times throughout the two month data collection timeframe. Specifics of the running program designed include daily 15-20 minute outdoor runs, with tokens being used as motivational tools when milestones are achieved. Although the motivational element is not a focus, any data or specifics on students perspectives regarding the motivational tools will be considered during the qualitative analysis if relevant.
9	Past research shows a great deal of evidence supporting students daily physical activity affecting their academic outcomes, fitness levels, as well as attention to task performance in positive ways. There is little evidence however specifically looking at the social and emotional benefits. Much of the articles discuss a weak inhibition being a potential cause for why behaviours are presented and that implemented programs or skills can be used to assist in the strengthening of these cognitive controls, allowing students to succeed in school with less negative social and emotional experiences. With one suggestion to improve inhibition being physical activity, implemented school programs have been looked at to determine specific types and timeframes that show the greatest benefit in students outcomes. (this box should expand as you type)
10	Location of research activity

	Identify all locations where research activity will take place.
11	Langley, British Columbia <i>(this box should expand as you type)</i>
12	Research activity outside of the UK If research activity will take place overseas, you are responsible for ensuring that local ethical considerations are complied with and that the relevant permissions are sought. Specify any local guidelines (e.g. from local professional associations/learned societies/universities) that exist and whether these involve any ethical stipulations beyond those usual in the UK (provide details of any licenses or permissions required). Also specify whether there are any specific ethical issues raised by the local context in which the research activity is taking place, for example, particular cultural and/or legal sensitivities or vulnerabilities of participants.
13	Canadian Ethics Module, School Board Ethics <i>(this box should expand as you type)</i>

14	Use of documentation not in the public domain: Are any documents <u>NOT</u> publicly available?	NO	☐
		YES	☒
15	If Yes, please provide details here of how you will gain access to specific documentation that is not in the public domain and that this is in accordance with prevailing data protection law of the country in question and England and Wales. Due to some students potential of various diagnosis, students information may need to be accessed and understood to ensure the social and emotional struggles that these students may have, are excluded from the data collection as these behaviour may be uncontrollable or due to other physical or cognitive deficiencies. <i>(this box should expand as you type)</i>		

SECTION F: Scope of Research Activity

1	Will the research activity include:	YES	NO
2	Use of a questionnaire or similar research instrument?	☒	☐
3	Use of interviews?	☒	☐
4	Use of diaries?	☒	☐
5	Participant observation with their knowledge?	☒	☐
6	Participant observation without their knowledge?	☐	☒
7	Use of video or audio recording?	☒	☐
8	Access to personal or confidential information without the participants' specific consent?	☐	☒
9	Administration of any questions, test stimuli, presentation that may be experienced as physically, mentally or emotionally harmful / offensive?	☐	☒

10	Performance of any acts which may cause embarrassment or affect self-esteem?	☐	☒
11	Investigation of participants involved in illegal activities?	☐	☒
12	Use of procedures that involve deception?	☐	☒
13	Administration of any substance, agent or placebo?	☐	☒
14	Working with live vertebrate animals?	☐	☒
15	Other primary data collection methods, please explain in this box For example, 'focus groups'. Please indicate the type of data collection method(s) in this box and tick the accompany box.	☐	☒
16	Details of any other primary data collection method: (this box should expand as you type)		

If NO to every question, then the research activity is (ethically) low risk and **may** be exempt from **some** of the following sections (please refer to Guidance Notes).

If YES to any question, then no research activity should be undertaken until full ethical approval has been obtained.

SECTION G: Intended Participants

1	Who are the intended participants:	YES	NO
2	Students or staff at the University?	☒	☐
3	Adults (over the age of 18 and competent to give consent)?	☐	☒
4	Vulnerable adults?	☐	☒
5	Children and Young People under the age of 18? (Consent from Parent, Carer or Guardian will be required)	☒	☐
6	Prisoners?	☐	☒
7	Young offenders?	☐	☒
8	Those who could be considered to have a particularly dependent relationship with the investigator or a gatekeeper?	☐	☒
9	People engaged in illegal activities?	☐	☒
10	Others (please identify specifically any group who may be unable to give consent) please indicate here and tick the appropriate box.	☐	☒
11	Other – please indicate here: (this box should expand as you type)		

12	Participant numbers and source Provide an estimate of the expected number of participants. How will you identify participants and how will they be recruited?	
13	How many participants are expected?	23 <i>(this box should expand as you type)</i>
14	Who will the participants be?	Grade 4 and 5 students. <i>(this box should expand as you type)</i>
15	How will you identify the participants?	They will be identified using initials. <i>(this box should expand as you type)</i>

16	Information for participants:	YES	NO	N/A
17	Will you describe the main research procedures to participants in advance, so that they are informed about what to expect?	☒	☐	☐
18	Will you tell participants that their participation is voluntary?	☒	☐	☐
19	Will you obtain written consent for participation?	☒	☐	☐
20	Will you explain to participants that refusal to participate in the research will not affect their treatment or education (if relevant)?	☒	☐	☐
21	If the research is observational, will you ask participants for their consent to being observed?	☒	☐	☐
22	Will you tell participants that they may withdraw from the research at any time and for any reason?	☒	☐	☐
23	With questionnaires, will you give participants the option of omitting questions they do not want to answer?	☒	☐	☐
24	Will you tell participants that their data will be treated with full confidentiality and that, if published, it will not be identifiable as theirs?	☒	☐	☐
25	Will you debrief participants at the end of their participation, in a way appropriate to the type of research undertaken?	☒	☐	☐
26	If NO to any of above questions, please give an explanation			
27	<i>(this box should expand as you type)</i>			

28	Information for participants:	YES	NO	N/A
29	Will participants be paid?	☐	☒	☐
30	Is specialist electrical or other equipment to be used with participants?	☐	☒	☐
31	Are there any financial or other interests to the investigator or University arising from this study?	☐	☒	☐

32	Will the research activity involve deliberately misleading participants in any way, or the partial or full concealment of the specific study aims?	☐	☒	☐
33	If YES to any question, please provide full details			
34	<i>(this box should expand as you type)</i>			

SECTION H: Anticipated Risks

1	Outline any anticipated risks that may adversely affect any of the participants, the researchers and/or the University, and the steps that will be taken to address them. If you have completed a full risk assessment (for example as required by a laboratory, or external research collaborator) you may append that to this form.		
2	Full risk assessment completed and appended?		Yes ☐
No ☒			
3	Risks to participants For example: emotional distress, financial disclosure, physical harm, transfer of personal data, sensitive organisational information		
4	Risk to Participant: Potential change in emotional regulation. Potential of physical injuries during increase in activity (daily running) <i>(this box should expand as you type)</i>	How will you mitigate the Risk to Participant Ensuring counselling and youth care worker assistance is available. Ensure safety measures are discussed such as appropriate foot wear, field boundaries and regular school safety protocols, and that first aid attendant is available. <i>(this box should expand as you type)</i>	
5	If research activity may include sensitive, embarrassing or upsetting topics (e.g. sexual activity, drug use) or issues likely to disclose information requiring further action (e.g. criminal activity), give details of the procedures to deal with these issues, including any support/advice (e.g. helpline numbers) to be offered to participants. Note that where applicable, consent procedures should make it clear that if something potentially or actually illegal is discovered in the course of a project, it may need to be disclosed to the proper authorities		
	<i>(this box should expand as you type)</i>		
6	Risks to investigator For example: personal safety, physical harm, emotional distress, risk of accusation of harm/impropriety, conflict of interest		
	Risk to Investigator:	How will you mitigate the Risk to Investigator: Ensure time is provided for reflective processing.	

	Potential emotional or physical distress due to workload or handling of students potential behaviours. (this box should expand as you type)	(this box should expand as you type)
7	University/institutional risks For example: adverse publicity, financial loss, data protection	
	Risk to University: Reputational of university standards. (this box should expand as you type)	How will you mitigate the Risk to University: Ensure full professionalism at all times. (this box should expand as you type)

8	Disclosure and Barring Service			
9	If the research activity involves children or vulnerable adults, a Disclosure and Barring Service (DBS) certificate must be obtained before any contact with such participants.	YES	NO	N/A
10	Does your research require you to hold a current DBS Certificate?	☐	☒	☐

SECTION I: Feedback, Consent and Confidentiality

1	Feedback What de-briefing and feedback will be provided to participants, how will this be done and when?
	Summarize with students and parents about the results that were shown once research has been completed. (this box should expand as you type)
2	Informed consent Describe the arrangements to inform potential participants, before providing consent, of what is involved in participating. Describe the arrangements for participants to provide full consent before data collection begins. If gaining consent in this way is inappropriate, explain how consent will be obtained and recorded in accordance with prevailing data protection legislation.
	Plain language statement for participate and guardians to sign off on understandings. (this box should expand as you type)
3	Confidentiality / Anonymity Set out how anonymity of participants and confidentiality will be ensured in any outputs. If anonymity is not being offered, explain why this is the case.
	Ensure forms and data collection is placed in secure location. This is to ensure participants are protected. (this box should expand as you type)

SECTION J: Data Protection and Storage

In completing this section refer to the University's Research Data Management Policy and the extensive resources on the University's Research Data Management web pages (<http://uwtsd.ac.uk/library/research-data-management/>).

1	Does the research activity involve personal data (as defined by the General Data Protection Regulation 2016 “GDPR” and the Data Protection Act 2018 “DPA”)?	YES	NO
	<i>“Personal data” means any information relating to an identified or identifiable natural person (‘data subject’). An identifiable natural person is one who can be identified, directly or indirectly, in particular by reference to an identifier such as a name, an identification number, location data, an online identifier or to one or more factors specific to the physical, physiological, genetic, mental, economic, cultural or social identity of that natural person.</i>	☒	☐
2	If YES, provide a description of the data and explain why this data needs to be collected:		
	This information will be secured. The data collection may include students health diagnosis including physical or cognitive impairments that may interfere with the study. <i>(this box should expand as you type)</i>		
3	Does it involve special category data (as defined by the GDPR)?	YES	NO
	<i>“Special category data” means sensitive personal data consisting of information as to the data subjects’ –</i> <i>(a) racial or ethnic origin,</i> <i>(b) political opinions,</i> <i>(c) religious beliefs or other beliefs of a similar nature,</i> <i>(d) membership of a trade union (within the meaning of the Trade Union and Labour Relations (Consolidation) Act 1992),</i> <i>(e) physical or mental health or condition,</i> <i>(f) sexual life,</i> <i>(g) genetics,</i> <i>(h) biometric data (as used for ID purposes),</i>	☐	☒
4	If YES, provide a description of the special category data and explain why this data needs to be collected:		
	<i>(this box should expand as you type)</i>		

5	Will the research activity involve storing personal data and/or special category data on one of the following:	YES	NO
6	Manual files (i.e. in paper form)?	☒	☐
7	University computers?	☐	☒
8	Private company computers?	☒	☐
9	Home or other personal computers?	☐	☒
10	Laptop computers/ CDs/ Portable disk-drives/ memory sticks?	☒	☐
11	“Cloud” storage or websites?	☐	☒
12	Other – specify:	☐	☒
13	For all stored data, explain the measures in place to ensure the security of the data collected, data confidentiality, including details of password protection, encryption, anonymisation and pseudonymisation:		

	<i>(this box should expand as you type)</i>		
14	All Data Storage		
15	Will the research activity involve any of the following activities:	YES	NO
16	Electronic transfer of data in any form?	☒	☐
17	Sharing of data with others at the University?	☒	☐
18	Sharing of data with other organisations?	☐	☒
19	Export of data outside the European Union or importing of data from outside the UK?	☐	☒
20	Use of personal addresses, postcodes, faxes, emails or telephone numbers?	☐	☒
21	Publication of data that might allow identification of individuals?	☐	☒
22	Use of data management system?	☐	☒
23	Data archiving?	☐	☒
24	If YES to any question, please provide full details, explaining how this will be conducted in accordance with the GDPR and DPA (and/or any international equivalent):		
	Dissertation with full data collection and analysis being electronically submitted to University of Wales, through online school platform. <i>(this box should expand as you type)</i>		
25	List all who will have access to the data generated by the research activity:		
	Nalda Wainwright, Karen Sirna, and myself (Jen Hansen) <i>(this box should expand as you type)</i>		
26	List who will have control of, and act as custodian(s) for, data generated by the research activity:		
	Myself as the researcher <i>(this box should expand as you type)</i>		
27	Give details of data storage arrangements, including security measures in place to protect the data, where data will be stored, how long for, and in what form. Will data be archived – if so how and if not why not.		
	Password protected Microsoft programs including Word and Excel. <i>(this box should expand as you type)</i>		
28	Please indicate if your data will be stored in the UWTSD Research Data Repository (see https://researchdata.uwtsd.ac.uk/). If so please explain. <i>(Most relevant to academic staff)</i>		
	Saved and secured on backup and external hard drive. <i>(this box should expand as you type)</i>		

29	Confirm that you have read the UWTSD guidance on data management (see https://www.uwtsd.ac.uk/library/research-data-management/)	YES	☒
		NO	☐
30	Confirm that you are aware that you need to keep all data until after your research has completed or the end of your funding	YES	☒
		NO	☐

SECTION K: Declaration

31	The information which I have provided is correct and complete to the best of my knowledge. I have attempted to identify any risks and issues related to the research activity and acknowledge my obligations and the rights of the participants. In submitting this application I hereby confirm that I undertake to ensure that the above named research activity will meet the University's Research Ethics and Integrity Code of Practice which is published on the website: https://www.uwtsd.ac.uk/research/research-ethics/		
	Signature of applicant:		Date: Sept 11 th , 2021

For STUDENT Submissions:

32	Director of Studies/Supervisor:	Karen Sirna	Date:
33	Signature:		

For STAFF Submissions:

34	Academic Director/ Assistant Dean:		Date:
35	Signature:		

Checklist: Please complete the checklist below to ensure that you have completed the form according to the guidelines and attached any required documentation:

☒	I have read the guidance notes supplied before completing the form.
☒	I have completed ALL RELEVANT sections of the form in full.
☒	I confirm that the research activity has received approval in principle
☐	I have attached a copy of final/interim approval from external organisation (where appropriate)
☐	I have attached a full risk assessment (and have NOT completed Section H of this form) (where appropriate) ONLY TICK IF YOU HAVE ATTACHED A FULL RISK ASSESSMENT
☒	I understand that it is my responsibility to ensure that the above named research activity will meet the University's Research Ethics and Integrity Code of Practice.

☒	I understand that before commencing data collection all documents aimed at respondents (including information sheets, consent forms, questionnaires, interview schedules etc.) must be confirmed by the DoS/Supervisor, module tutor or Academic Director.
☒	I have deleted the guidance notes before submitting the PG2 for consideration

RESEARCH STUDENTS AND STAFF ONLY

All communications relating to this application during its processing must be in writing and emailed to pgresearch@uwtsd.ac.uk, with the title 'Ethical Approval' followed by your name.

You will be informed of the outcome of your claim by email; therefore **it is important that you check your University and personal email accounts regularly.**

STUDENTS ON UNDERGRADUATE OR TAUGHT MASTERS PROGRAMMES should submit this form (and receive the outcome) via systems explained to you by the supervisor/module leader.

This form is available electronically from the Academic Office web pages:

<https://www.uwtsd.ac.uk/academic-office/appendices-and-forms/>

Application Process

All staff research projects and all research students must submit the Ethical Approval Form to the **University Research Ethics Committee** via the Academic Office (pgresearch@uwtsd.ac.uk). Staff research directly in relation to personal study for taught undergraduate or Masters programmes should be submitted via the Institute procedures explained below.

Taught masters and taught undergraduate research Ethical Approval Forms are considered **within Institutes**. Institutes will provide details of the specific processes for this. Where the Ethical issues within any single ethical application are of particular concern the Institute will refer these to the University Research Ethics Committee. Any student activity that involves the collection of primary data needs to undergo Ethical approval, this includes assignment work as well as dissertations.

Appendix G

Date	Time	Student	Behaviour	Behaviour Code	Observations or Insight	Length of Behaviour	Run Time
Feb. 16, 2022	11:15am	RH	paying attention	EX	head on desk not following along or watch math lesson- said too tired	45min	
Feb. 18, 2022	11:30am	LW	left classroom	EX	missed majority of math lesson- said it was too hard	30min	
			crying, yelling, walking away from adult	CR, Y, AV			
Feb. 24, 2022	10:30am	LW			issue with peer on the playground	30 min	
Feb. 28, 2022	12:45pm	CV	crying	CR	difficulty with friends on the playground	5 min	
Mar. 1, 2022	11:00am	LW	left classroom	EX	felt math was hard so left classroom to avoid activity	20 min	
			angry and negative talk, not participating				
Mar. 2, 2022	1:00pm	LW		EX	didn't want to finish work in order to get game day privileges	40 min	
Mar. 4, 2022	9:45am	LW	left class/ not participating	EX	didn't want to finish work- continued leaving classroom	20 min	
			angry- aggressive	EX	upset about being asked to complete work- wondering the hall, going outside without asking, and when being asked to come to class threw the broom she was holding and yelled I don't care.	15min	
Mar. 7, 2022	9:30am	JT	shut down/	EX	difficulty with other students not including him	10min	
	12:00pm	JT	crying	CR	Friends on playground being unkind and running away from him	20 min	
Mar. 8, 2022	10:00am	JT	upset/ withdraw	EX	students in class wrote an unkind note to him	10 min	
	10:00am	RH	withdraw/ crying	EX- CR	upset about getting spoken to about being unkind to a fellow classmate	20 min	
Mar. 9, 2022	11:00am	RH	Not	EX	was asked to move to new spot in the class and showed visible frustration	10 min	
	11:00am	CH	Crying	CR	feeling left out by friends	20 min	
	11:30am	JT	withdraw	EX	frustrated because his science project wasn't working	3min	
Mar. 11, 2022	11:15am	LW	withdraw	EX	Frustrated with math	60 min	
	12:30pm	LW	Crying/ yelling	CR-Y	Upset about a student outside who was not leaving them alone	30 min	
	10:45am	LW	upset/ withdraw	EX	Mad at some friends for them not wanting her on their team	20 min	
RUNNING IMPLEMENTATION							
Mar. 28	11:00am	LW	Angry,	EX	Upset about being asked to do math	45 min	9:15am
	11:15am	RH	Crying/ withdraw	CR-EX	Frustrated with math	10 min	
Mar. 29	11:20am	TM	Crying	CR	Said her foot was sore during math (had been running around 30 min with no issues)- unexplainable emotions- behaviour during math of which she struggles	30 min	9:30am
Mar. 30	11:30am	EM	Crying	CR	Upset about her friends being upset and feeling bad for something unkind that was done earlier that day	15 min	11:30am
	11:30am	CV	Crying	CR	Felt bad for something said earlier to a friend	10 min	
	2:15pm	RH	Crying/ angry	CR-EX	Got hit with a ball during gym- throw pinni and ran out of the gym crying	15 min	
Mar. 31	9:20am	JT	Crying/ yelling	CR-Y	Annoyed by other students repeating a phrase	5 min	9:30am
Apr. 5	12:30pm	CH	Crying/ Physical	CR-PH	Became physical with another student on the playground- cried when spoken to by the principal	20 min	9:30am
Apr. 6	1:00pm	AY	Crying	CR	Upset about friends playing a trick on her	20 min	10:30am
Apr. 12	1:00pm	LW	withdraw	EX	Ignore and became angry when asked to do her work	20 min	No Run
Apr. 21	10:45am	JT	kicking	PH	kicking classmate under desk because they were being annoying	5 min	9:15am
		RH	kicking	PH	kicking classmate under desk because they were being annoying	5 min	

Appendix H

Student	Total Laps	Rewards Tokens	Behaviours
KA	68	25K, 50K	
AA	52	25K, 50K	
OG	65	25K, 50K	
HH	64	25K, 50K	
CH	65	25K, 50K	
RH	48	25K, 50K	3
NL	46	25K, 50K	
LL	59	25K, 50K	
TM	62	25K, 50K	1
EM	63	25K, 50K	1
BM	50	25K, 50K	
EP	60	25K, 50K	
CP	42	25K, 50K	
CR	76	25K, 50K, 75K	
GS	62	25K, 50K	
JT	50	25K, 50K	2
CV	62	25K, 50K	1
MW	70	25K, 50K	
LW	62	25K, 50K	
SW	64	25K, 50K	
LW	64	25K, 50K25K, 50K	2
AY	68	25K, 50K	

Appendix I

Themes	Social Awareness	Emotional Reaction	Self-Reflection	Seeking an Adult	Consistency	Competitiveness
Data Tracking						
Behaviours Observed	✓	✓		✓	✓	✓
Student Questionnaire	✓	✓	✓	✓		✓
Student Survey	✓	✓	✓			
Student Interviews	✓	✓	✓	✓	✓	✓

Appendix J

Behaviour	Specifics on scenario	Theme Connection Based on conversation or reaction from student
Not paying attention	head on desk not following along or watching math lesson- said too tired.	Seek adult
Left class	missed majority of math lesson- said it was too hard.	Seek adult, competitiveness
Crying, yelling, walking away	issue with peer on the playground	Seek adult
Crying	difficulty with friends on the playground	Seek adult, consistency
Left class	felt math was hard so left classroom to avoid activity.	Seek adult, competitiveness
Angry and negative talk, not participating	didn't want to finish work in order to get game day privileges.	Seek adult, competitiveness
Left class, not participating	didn't want to finish work- continued leaving classroom.	Seek adult, competitiveness, consistency
Angry, aggressive	upset about being asked to complete work- wondering the hall, going outside without asking, and when being asked to come to class threw the broom she was holding and yelled I don't care.	Seek adult
Shut down	difficulty with other students, not including him.	Competitiveness, consistency
Crying	Friends on playground being unkind and running away from him.	Seek adult, consistency
Upset, withdrawal	students in class wrote an unkind note to him.	Seek adult
Withdrawal, crying	upset about getting spoken to about being unkind to a fellow classmate.	Seek adult, competitiveness
Crying	was asked to move to new spot in the class and showed visible frustration.	Seek adult, consistency
Withdrawal	feeling left out by friends	Seek adult, consistency
Withdrawal	frustrated because his science project wasn't working.	Seek adult, competitiveness
Crying, yelling	Upset about a student outside who was not leaving them alone.	Seek adult
Upset, withdrawal	Mad at some friends for not wanting her on their team.	Seek adult, competitiveness, consistency
RUNNING IMPEMETATION		
Angry	Upset about being asked to do math.	Seek adult, competitiveness
Crying, withdrawal	Frustrated with math.	Seek adult, competitiveness
Crying	Said her foot was sore during math (had been running around 30 min with no issues)- unexplainable emotions- behaviour during math of which she struggles with	Seek adult

Crying	Upset about her friends being upset and feeling bad for something unkind that was done earlier that day	Seek adult, competitiveness
Crying	Felt bad for something said earlier to a friend.	Seek adult, competitiveness
Crying, angry	Got hit with a ball during gym- throw pinni and ran out of the gym crying.	Seek adult
Crying, yelling	Annoyed by other students repeating a phrase.	Seek adult, consistency
Crying, physical	Became physical with another student on the playground- cried when spoken to by the principal.	Seek adult, competitiveness
Crying	Upset about friends playing a trick on her.	Seek adult
Withdrawal	Ignore and became angry when asked to do her work.	Consistency
Kicking	kicking classmate under desk because they were being annoying.	Seek adult
Kicking	kicking classmate under desk because they were being annoying.	Seek adult