

**Movement Matters: The Experiences of Students and Their Teacher Involved in a  
Combined Physical Activity and Academic Program**

**Curriculum and Identity Making in Room 27**

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By

Allison L. Cameron

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## Abstract

As a teacher within a special needs classroom of students ranging in age from 13 to 22, I observed first-hand the outcomes of unhealthy habits, behavioural issues, and academic struggles. In response to these learning and behavioral difficulties within my high school classroom, I created and implemented a *Movement Matters* Program consisting of a combined exercise and academic program for my students. The program produced phenomenal results within its first year. This thesis is a manuscript style thesis consisting of two embedded papers as central themes. The first paper highlights the development of *Movement Matters* and the challenges and successes experienced by myself, the classroom teacher, and my students. The second paper is a narrative inquiry that shares the experiences of two students engaged in *Movement Matters* and myself, as their teacher, and graduate student researcher. Over the course of two months I inquired into the ways that their school experiences and their relationships with the teacher, classmates, and subject matter influenced the way they composed their stories to live by. Also threaded through this thesis is an abundance of data, such as anecdotal records, pre and post academic and fitness tests, and student journals. Field notes, taped conversations and observations with each of the two youth captured stories and realities of their experiences and are inter-twined with the literature and the theory. These experiences and relationships are negotiated carefully using Nodding's ethics of care. Both my experiences and my students' experiences are situated alongside Dewey's Criteria of Experience within a narrative framework. Using research, I wanted to understand and retell their stories as well as link Clandinin and Connelly's commonplaces of narrative inquiry: place, temporality, and sociality.

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My parents, Ash and Orva Cameron, for being the greatest support through this, and all other endeavors in my entire life. I am so grateful to have been shaped by such amazing human beings.

They constantly remind me of my passion for making schools better places for youth. Despite the ups and downs I have encountered, they insist I keep pushing forward to positively affect the youth I work with.

I love going to work every day because of the youth I work with. I owe these youths, as I would not be where I am without them, their brutal honesty, and their trust in me. A special thank you to all of the youth who have been involved in *Movement Matters*, especially the inaugural class, four years ago. If Cody had not got on the treadmill beside me four years ago, I am not sure if I would have had any success. Brandon and Kevin, for allowing me into their lives and their stories, and for being honest in sharing your stories to live by. I think we are all a little more happy-ish because of ‘this’ journey.

*Movement Matters: Investigating the Experiences of Students and Their Teacher  
Involved in a Combined Physical Activity and Academic Program*

This is a manuscript style thesis, containing four chapters. The manuscript format for this thesis consists of two manuscripts. The content of the manuscripts is based upon research done at the University of Saskatchewan. The manuscripts are to be published, or in preparation for submission. I am the major contributor and writer of the manuscripts. Dr. Brenda Kalyn will be the second author of Chapter 2 and Dr. M. Shaun Murphy will be the second author of Chapter 3. Due to the nature of the manuscript style thesis, there may be some duplication and overlap in the chapters in order to meet the needs of each individual chapter.

The first chapter introduces this thesis and familiarizes the reader with what *Movement Matters* is, why it exists, and how it came about. The need for the program; physically, mentally, spiritually, and emotionally, is introduced through a variety of literature reviews. Historians, such as Aristotle and Plato reference the need for innovative curriculums, physical fitness, and intellectual development, and programs such as *Movement Matters* can meet these requirements.

In chapter two, *Movement Matters* is explained in more depth and the story of how it evolved is shared. Literature reviews emphasize the need for the program and the importance of being physically active. The physical, mental, social, spiritual, and academic benefits are introduced in these literature reviews. Examples of how students have found successes with the program whether it is academically, behaviorally, physically, emotionally, or with addictions are revealed. These successes have been

discovered through data including: observations, anecdotal records, journal entries, and pre and post academic and fitness tests.

Chapter three explores the experiences of myself, and two youth involved in *Movement Matters*. I had three conversations with each youth and used a narrative inquiry approach to tell their stories to live by. Narrative inquiry is an approach to understanding and researching the way people make meaning of their lives. The narrative inquiry methodology is explained, as well as why I chose it as an approach for this chapter. Clandinin, Connelly, Noddings, and Dewey reinforce the importance of experience, relationships, and holistic curriculums. Terms such as ‘stories to live by,’ ‘identity making,’ ‘curriculum of lives,’ ‘bumping up,’ and ‘lasting wonders’ are introduced in this chapter and explained in detail.

Chapter four ties all of my tensions and wonders together while reinforcing my belief for *Movement Matters* and the need to be physically active. Some of the challenges of implementing a new program are discussed as well as my lasting wonders. I reflect on the journey, the methodology, and the curriculum; the planned, enacted, and experienced curriculums.

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## **Chapter 1: Introduction**

### **Obesity Issues**

There are millions of Canadians who are concerned with the growing epidemic of childhood obesity. There is no question childhood obesity is a crisis which must be addressed for the well-being of current and future generations. In Canada, the rate of obesity in children has almost tripled in the last 25 years with over one quarter of Canadian children between the ages of 2 and 17 years old, currently overweight or obese (Statistics Canada, 2010). Along with obesity looms other diseases; many of which have pediatric origins. Youth behaviours can be predictors of future health complications.

Obesity rates continue to increase into adulthood. Approximately one-third of normal weight 20 year olds will become overweight within eight years and one-third of overweight 20 year olds will become obese within eight years. If this trend continues, in 20 years we can expect 70% of the 35-44 year olds in Canada to be overweight or obese versus 57% who are currently overweight or obese (Childhood Obesity Foundation, 2010). This trend exacts a dangerous toll upon society. Quality of life can be lower, self-image and self-esteem can be affected, possibly leading to depression, anxiety, and issues of addiction. Damaging health complications such as high blood pressure, increased risk of heart attack and stroke, heart disease, premature aging, and diabetes are also of primary concern (Statistics Canada, 2010).

The eating habits of North Americans have changed over the years. The increasing availability of inexpensive, high fat, low nutrition foods along with the climbing prices of healthy, nutritious options, our cultural proclivity toward fast, easy, convenient lifestyles, and a lack of exercise has contributed to the obesity crisis.

## **The Need for ‘*Movement Matters*’**

As a teacher within a modified and alternative high school of students ranging in age from 13 to 22, I observed first hand the outcomes of unhealthy habits, behavioural issues, and academic struggles. These observations combined with my passion for youth led me to design and implement an innovative program within my classroom called *Movement Matters* at River City High School (RCHS)<sup>1</sup> in a large urban city. Understanding and personally experiencing the mental, physical, and emotional benefits of being active, I believed that I could help the students struggling within my classroom. Many of my students were overweight and obese and all of RCHS students have learning difficulties whether it is gaps in their learning as a result of attendance, disabilities and or disorders or cognitive impairments affecting their ability. Many students have conditions such as diabetes, Attention Deficit Disorder (ADD), Attention Deficit Hyperactivity Disorder (ADHD), mental health issues such as depression, anxiety, posttraumatic stress disorder, abandonment issues, attachment disorders, and bipolar disorder.

Initially, in response to the ‘learning difficulties’ and other challenges within my classroom, I implemented a 20-minute exercise segment at the start of their first class. Within the first year, it became evident that the improvements in my classroom should be made available to the rest of the school. Now, three years later, thirteen classes of students come to the *Movement Matters* classroom three to five times each week due to the remarkable success of the program, excellent results, and the student and staff buy-in.

Each class was 45 minutes long so the students spent the first 20 minutes on treadmills or stationary bikes and then the second 20 minutes of the period on the academic subject: mathematics, language arts, Native Studies, life transitions, or art. Each student wore a heart rate monitor, and elevated their heart rate to 65%-75% of their maximum heart rate (MHR). Test

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<sup>1</sup> All names and places have been changed to protect anonymity of the youth.

results have been astounding. During a four-month trial in the first year, many students improved on average from a grade two level to grade a grade eight level; an improvement of six-grade-levels in sight word vocabulary in only four months.

However impressive these academic results were, I was struck by a more profound change in my students. In an inner-city environment where truancy is standard, my students were now showing up for school every day. They stayed focused through class and they were now teachable. They were losing weight and becoming fit. Their self-confidence improved from day to day. The impact on the students' lives beyond academics was also remarkable. Students started making positive choices such as quitting smoking and other addictive drugs, leaving gangs, and getting off Ritalin: a medication used to control hyperactivity. Whether *Movement Matters* was solely responsible for these positive choices or if it was due to other influences or supports is speculative. There was very little if any bullying taking place in my classroom. The main competitiveness came internally as students competed against themselves in an attempt to improve their own previous personal bests. Students appeared to be so focused on their progress they paid little attention to bothering others. An atmosphere of encouragement was fostered in the classroom and I encouraged them to cheer each other on. All of this could be reasons for what appeared to be a miracle. Ultimately, students were getting fitter and getting smarter.

### **Exercise and Physiology**

As a result of my observations and investigating the literature related to exercise, I offer the following information to support the possible reasons for the improvement of my students' work and behaviors. The human brain is a remarkable organ within the human body that is designed to help us excel at movement if movement is applied to our daily lives. Increased

movement also has reciprocal affects on other aspects of our social, emotional, and cognitive functions. The brain is designed and developed to make us better movers. More brain cells participate when we are moving, exercising, and playing than if we are motionless. Action is good for the brain, and similar to muscle action, the adage ‘use it or lose it’ applies (Powell, 2006).

Only a mobile creature needs a brain, points out New York University neurophysiologist Rodolfo Llinás in his 2002 book, *I of the Vortex: From Neurons to Self*. To illustrate, he uses the example of a tiny jellyfish-like animal called a sea squirt: born with a simple spinal cord and a three hundred–neuron “brain,” the larva motors around in the shallows until it finds a nice patch of coral on which to put down its roots. It has about twelve hours to do so, or it will die. Once safely attached, however, the sea squirt simply eats its brain. For most of its life, it looks much more like a plant than an animal, and since it is not moving, it has no use for its brain. Llinás’s (2002) interpretation: “That which we call thinking is the evolutionary internalization of movement” (p. x35).

James Blumenthal and his colleagues at Duke University surprised many people in 1999 when they demonstrated that regular exercise was as effective as antidepressant medications for patients with major depression. The researchers studied 156 older adults diagnosed with major depression, assigning them to receive the antidepressant Zoloft, 30 minutes of exercise three times a week, or both. According to Blumenthal (1999):

Our findings suggest that a modest exercise program is an effective, robust treatment for patients with major depression who are positively inclined to participate in it. The benefits of exercise are likely to endure particularly among those who adopt it as a regular, ongoing life activity. (pp. 2369-2370)

In September 2000, Blumenthal and his colleagues released the results of a follow-up study where they continued to follow the same subjects for six additional months and found that the group who exercised but did not receive Zoloft did better than either of the other two groups (Babyak, Blumenthal, Herman, Khatri, Doraiswamy, Moore, Craighead, Baldewicz, & Ranga Krishnan, 2000).

According to Dr. John Ratey (2008), clinical associate professor of psychiatry at Harvard Medical School, research supports the idea that exercise combats stress-related diseases, which, obviously, can prevent people from working and leading productive lives. Both stress and inactivity, the twin hallmarks of modern life, play big roles in the development of arthritis, chronic fatigue syndrome, fibromyalgia, and other autoimmune disorders. Reducing stress by any means, and especially by exercise, helps patients with their recovery from these diseases.

In recent years, doctors have started recommending exercise for cancer patients, both to help boost the immune response and to fend off stress and depression. Research suggests that physical activity is a factor which might influence some forms of the disease: twenty-three of thirty-five studies show an increased risk of breast cancer for those women who are inactive; physically active people have a 50 percent less chance of developing colon cancer; and active men over sixty-five have a 70 percent lower chance of developing the advanced, typically fatal form of prostate cancer (Ratey, 2008).

According to Ratey (2008), regular exercise can raise levels of dopamine and norepinephrine, and improve functioning of brain systems that regulate impulse, memory, and attention. It is easy to get distracted in today's world. It has become so full of information, noise, and interruptions that all of us feel overwhelmed and unfocused at times. The amount of data on the world is doubling every few years, but according to Ratey (2008), our attention

system, like the rest of the brain, was built to make sense of the surrounding environment as it existed ten thousand years ago. The attention system does not claim a central address in the brain. Rather, it is a diffuse web of reciprocal pathways that begins at the locus coeruleus, the arousal center, a part of the brain stem, and sends signals throughout the brain to wake it up and cue our attention. The network engages such areas as the reward center, the limbic system, and the cortex; more recently scientists have included the cerebellum, which governs balance and fluidity. It turns out that there is a positive correlation between attention, consciousness, and movement.

The good news is that with regular exercise we can raise the baseline levels of dopamine and norepinephrine by spurring the growth of new receptors in certain brain areas, notes Ratey in his book *SPARK* (2008). In the brain stem, balancing norepinephrine in the arousal center also helps. The prefrontal cortex also bears responsibility for ADHD and, Ratey states that exercise has a positive influence on the functioning of this area as well. The prefrontal cortex is the home of working memory, which sustains attention during a delay for a reward, and holds multiple issues in the mind at once. If working memory is impaired, we are unable to stay on task or work toward a long- term goal because we can not keep an idea in our mind long enough to operate on it or to ponder, process, sequence, plan, rehearse, and evaluate consequences. It is not simply a matter of whether the signals get through to capture our attention, but how fluidly that information travels. The attention systems ties in with movement and thus exercise: the areas of the brain that control physical movement also coordinate the flow of information.

Ratey (2008) explains, antidepressants seem to work through a bottom-up chain of events, meaning the activity begins in the brain stem and ripples through the limbic system until it reaches the prefrontal cortex. This might explain why antidepressants relieve the physical

effects of depression first; we feel more energetic before we feel less sad. Conversely, with cognitive behavioral therapy and psychotherapy, we feel better about ourselves before we feel better physically. Therapy works from the prefrontal cortex down, to modify our thinking so we can challenge the learned helplessness and spring ourselves out of the hopeless spiral. The beauty of exercise is that it attacks the problem from both directions at the same time.

Exercise gets us moving, which naturally stimulates the brain stem and gives us more energy, passion, interest, and motivation. We feel more vigorous. Exercise shifts our self-concept by adjusting chemicals such as serotonin, dopamine, norepinephrine, brain-derived neurotrophic factor (BDNF), and vascular endothelial growth factor (VEGF). Unlike many antidepressants, exercise does not selectively influence anything; it adjusts the chemistry of the entire brain to restore normal signaling (Ratey, 2008).

Ratey (2008) states that in smokers, just five minutes of intense exercise can be beneficial. Nicotine is an oddball among addictive substances as it works as a stimulant and a relaxant at the same time. Exercise fights the urge to smoke because in addition to smoothly increasing dopamine it also lowers anxiety, tension, and stress levels; the physical irritability that makes people so grouchy when they are trying to quit. Exercise can fend off cravings for fifty minutes and double or triple the interval to the next cigarette. The fact that exercise sharpens thinking comes into play here, because one of the withdrawal symptoms of nicotine is impaired focus. As evidence of this, one study found that there are more workplace accidents during the Great American Smokeout than on any other day of the year (Waters, Jarvis, & Sutton, 1998. p. 137).

## **Crisis Revisited**

Aristotle wrote: “If you would *understand anything*, observe its beginning and its development” (History News Network, n.d.). The earliest evidence of man suggests hunter-gatherers moved 12-15 miles per day and survival of the fittest was the rule of nature. Technology and dramatic shifts in nutrition 10,000 years ago and again only a little more than 100 years ago after the industrial revolution represent two periods of significant failure in human health (Agropolis Museum, n.d.).

Early educational models such as the Socratic Method stimulated thought by asking questions. One such profound dialogue that provides a foundation for *Movement Matters* can be found in Plato’s Republic (380 B.C), one of the most influential works in Western philosophy. Plato inquires into the central problem or question of how to live a good life and what the ingredients of an ideal State are. While Plato’s conception was all encompassing, the fundamental basis for the creation of an ideal state was the inhabitants themselves. Specifically, the reliance on education with an emphasis on incorporating three specific components: physical fitness, the arts (music, poetry and drama), and intellectual development (Brown, 2004).

A prevalent misconception exists that time invested in physical activity/physical education (PE) is detrimental to scholastic achievement. This is unequivocally false as a large body of evidence exists that supports physical fitness as a whole enhances both body and mind function, and particularly exercise used as a pre-learning stimulus (Taras, 2005), such as in *Movement Matters*.

The International Journal of Behavioural Nutrition and Physical Activity states:

Quasi experimental data indicate that allocating up to one hour per day of curriculum time to physical activity programs does not affect the academic performance of primary



school students negatively, even though the time allocated to other subjects usually shows a corresponding reduction. An additional curricular emphasis on PE may result in small absolute gains in grade point average (GPA) and such findings strongly suggest a relative increase in performance per unit of academic teaching time. (Trudeau & Shephard, 2008, p. 1)

In the 1971 Trois Riviere Study, students engaged in one hour of physical activity during each academic day. Teachers reported many advantages as a result of this program and observed positive outcomes for students. At the end of the six-year study, the students who participated in PE every day showed significant gains in fitness relative to those in the control group. Additionally, those in the experimental program earned consistently higher marks in grades two through six and also scored higher on the provincial math exam, despite the fact that they had logged 13-14% fewer hours in the classroom. This suggests that more time can be allotted to primary school PE without academic penalty. According to Dr. R.J. Shephard, scientific director of the study:

Through its impact on psychomotor learning, physical activity enhances the total process of intellectual development...Greek philosophers were correct to insist on the importance of a healthy body to a healthy mind; body and mind are closely linked at all ages, and an individual's potential can be realized only through the development of both. (Trudeau, Laurencelle, Tremblay, Rajic, & Shephard, 1999, pp. 111-117)

In another study, small space physical activities (15-19 minutes per day) were incorporated within a grade three classroom in addition to their regular 30-minute PE classes with a control grade three class receiving only regular PE. These small space activities were immersed in the students' day to increase physical activity, improve motor learning, provide cognitive breaks,

influence cognitive function, and provide movement breaks over a ten-week period. The academic gains in the physically engaged class cannot be directly attributed to the small space physical activities; however, the physically engaged group and the control group had similar scores in post-tests, despite the engaged class participating in an additional 15-19 minutes of activity per day outside of the regular PE class. The additional 75-95 minutes of combined physical activity per week had no detrimental effect on the students' academic performance but the classroom teacher noted significant behavioral changes in students involved in the extra activities (Kalyn, Paslawski, Wilson, Kikcio, & MacPhedran, 2007).

Childhood Obesity Foundation (2010) shows that overweight children become overweight adults. Similarly, fit/active children are likely to maintain positive lifestyle habits and become fit/active adults. Children have become less active over the past ten years (Department of Health and Human Services; Centers for Disease Control and Prevention, 2008), and according to data released by the Canadian Fitness and Lifestyle Research Institutes (CFLRI), the issue of child and youth physical inactivity in Canada is an even larger public health concern than previously believed. It recognizes that 91% of Canadian children and youth are not meeting the guidelines set forth by Canada's Physical Activity Guides for Children and Youth (Canadian Fitness and Lifestyle Research Institutes, 2007).

According to Ahmed, Macdonald, Reed, Naylor, Liu-Ambrose, & McKay (2007), despite quality PE curricula, its implementation is not meeting student needs. Ahmed et al. (2007) have discovered that a significant number of students do not receive the recommended time allocation for PE; a significant number of students are not taught entire movement categories containing numerous learning outcomes; two-thirds of Canadian children and youth are not active enough to lay a solid foundation for future health and well-being; only one fifth of youth accumulated the

recommended seven hours a week of out of school sports or exercising; and one out of every four Canadian children is overweight, and that proportion has been increasing steadily over the last decade.

With early onset of diabetes in children due to obesity, and an increasing number of diabetes cases in the older, baby-boomer generation, a health epidemic is looming that could debilitate our economy. Diabetic patients cost our health care system two to three times more than those without, and this does not account for costs associated with maintaining diabetes, such as medication and supplies. The Childhood Obesity Network estimates diabetes, and the associated complications, cost our health care system \$13.2 billion annually, and this number is expected to rise to \$19.2 billion by 2020. Other Western countries are not far behind: New Zealand spends 2.5% of all health care expenditures on treating obesity, Australia and France spend 2.0 %, and the United States spends 5.5-6.8% (divided amongst men and women). With massive cuts to our work force, Canada is at risk of a substantial decrease in national productivity due to health, and this forecasts an economic crisis. According to the World Health Organization (WHO), China is on course to lose \$558 billion in national income due to heart disease, stroke and diabetes. The power economies of the world must prepare for a potential economic crash, and immediate changes must be made to prevent a depleted workforce (Stokell, 2010).

Finally, one last contributor to the obesity crisis is that today the aspirations of youth to emulate their athletic hero's abilities are no longer being imitated and pursued on the playgrounds. Instead the youth are often found on couches with joystick or controller in hand likely surrounded with potato chips and soda as the internet and video games is more popular now.

## **Innovative Curriculum**

As teachers, we are positioned to affect the education, school curriculum, and aspire to create healthy outcomes for our students. Healthy outcomes include the spiritual, social/emotional, physical, and intellectual aspects of the students. If programs such as *Movement Matters* can positively influence spiritual, social/emotional, physical, and intellectual outcomes for both students and teachers alike, then learning experiences and research into student experiences should be shared so all stakeholders may benefit and continue to contribute to the well being of our students.

Chapter two explains what *Movement Matters* is and how it came to be. Literature reviews are used to emphasize the need for the program and the importance of being physically active. The physical, mental, social, and academic benefits are introduced in these literature reviews. Research has shown that PE and physical activity result in improved physical fitness levels, body image and self-esteem, enhanced academic performance, and a reduction in disciplinary issues, and that time dedicated to fitness pursuits does not contribute to lower grade scores.

The impact that exercise has on the brain and learning is discussed and how it is highly correlated with neurogenesis, the production of new brain cells. We also discover that neurogenesis is correlated with improved learning and memory and in addition, neurogenesis appears to be inversely correlated with depression.

The goal of *Movement Matters* is to instill intrinsically motivated lifelong healthy habits. Even the most difficult and stubborn students have found successes with the program whether it is academically, behaviorally, physically, emotionally, or with addictions. These successes have been shared through informal data such as: observations, anecdotal records, journal entries, and pre and post academic and fitness tests.

## **Chapter 2: The Making of *Movement Matters***

### **Introduction**

Chapter two is a narrative account of my work as a teacher and my students' experiences in an urban high school. A variety of programs are offered for a challenging and exceptional group of students who have found themselves, in many cases, leading difficult lives and experiencing limited success both in and out of school. My experiences and my students'

experiences intersected through a unique program I developed called *Movement Matters*.

Through this program, students achieved successes far beyond their expectations academically, behaviorally, physically, and/or emotionally and found great satisfaction in newfound possibilities within their education and their lives.

### **Sit Fits and Structured Success**

In *The Brain Rules*, John Medina (2008) says that one of the least productive environments for learning and productivity is the classroom and the other is the office cubicle. Behaviour disorders such as Attention Deficit Hyperactive Disorder (ADHD), Oppositional Defiance Disorder (ODD) and daily diets of Slurpees and Ichiban noodles, combined with an ‘unproductive classroom’ can lead to disasters in the classroom. In 2004, a particularly demanding group of twelve students aged 12-14 in my Structured Success<sup>2</sup> program challenged me indirectly to find innovative methods to accommodate their needs. Asking these students, who were all diagnosed with Attention Deficit Disorder (ADD), ADHD, ODD, depression and/or anxiety to sit in their desks all day long and be creative and productive was counterproductive and a poor pedagogical prescription for what they really needed to begin to be successful.

In September 2004 while I was teaching grades 6-8 Structured Success in an elementary school, one of my students was on the cross-country team that I coached. I noticed that the days where he joined us for the 8:00 am runs, his behavior was more settled for the remainder of the day. I realized not all my students were getting enough physical activity during the day, many did not eat breakfast, and the majority would eat processed, sugar-laden, nutrient deficient meals. I noticed during recess supervision that many students at my school would sit and listen to music

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<sup>2</sup> Structured Success is a program designed for students who display inappropriate behaviours with problematic frequency, severity, or duration, and interventions within the regular classrooms have proven ineffective. Structured Success offers more structure, a calmer classroom with smaller numbers and more one-on-one time.

or play hand held video games rather than run around and get vigorous exercise like I used to do at their age. I realized I could not control what my students were eating but I could get them more active.

I slowly started increasing the amount of time we spent doing physical activity such as walks, jogs, snow shoeing, shinny, baseball, cross country skiing, and tennis, along with their regular PE. While the behaviors became more manageable in the classroom, I wondered exactly why this was happening? Were the behaviors becoming more manageable in the classroom because of the extra physical activity? Had any other teachers noticed similar results? Was there any data or research to support increased activity and improved behavior? I continued the daily PE and extra physical activity while researching the benefits of exercise on behavior. As their teacher, I was responding to my observations of my students' needs and behaviors. I was implementing pedagogical strategies and I needed to understand what might be happening to these students in relation to physical activity, behavior, and potentially their schoolwork.

In the summer of 2005, I broke my ankle and I was devastated to lose my active lifestyle and pondered the impact on returning to my students in the fall with a cast. Many students were returning from the previous year, and they knew the fitness regimen that had become a part of our daily routine. We were active in the classroom, in the gym and/or outside every day and this worked well for all of us. My students were disappointed that my participation in our routine would change; however, I was determined to keep them active.

While my cast came off before the first snowfall, my ankle was still weak and I was unable to run. I bought a SitFit<sup>3</sup> to stand on at the front of the class while I taught to continue to strengthen my ankle. When I was finished strengthening my ankle on this SitFit, I put it on my

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<sup>3</sup> SitFits are inflatable rubber discs are 12 inches in diameter and two inches thick. They are designed to engage the core while sitting on them or improve balance while standing on them.

computer chair to engage my core while sitting. I noticed when my students sat on the disc it helped improve their behaviors such as fidgeting, impulsivity, focusing. I hoped to buy 12 SitFits from a local gym so that each student would have one but I could not afford to do so. Instead, I secured a donation of treadmills and stationary bikes for the Fall from this same gym when I explained to the owner what I was researching.

I continued to research exercise and behavior and in February 2007, I discovered research on academics and exercise called PE4LIFE (2007). A school in Naperville, Illinois was receiving global attention for its vigorous fitness programs and not coincidentally, the highest math and science scores in the country (PE4LIFE, 2007). I contacted the two men; the two 'gym teachers', from Naperville School largely responsible for the success of PE4LIFE. In a phone conversation with Phil Lawler, he told me:

It's about enabling each student to maintain a physically active lifestyle forever. It means emphasizing fitness and wellbeing, not athleticism. It eliminates practices that humiliate students. And it assesses students on their progress in reaching personal physical activity and fitness goals. A [quality] program exposes kids to the fun and long-term benefits of movement – it's really that simple. (Personal communication, December 21, 2007)

Paul Zientarski was the other gentleman I spoke with and he affirmed the academic component of the program, "the 2002 [California] study correlated that the more fit the kids were, the better they performed academically. It's a part of why our students do as well as they do - it's a total mind, total body educational approach" (personal communication, December 21, 2007). These conversations inspired and motivated me to design and implement *Movement Matters*.



The timing was right and brought my informal research in line with my graduate studies and my research project. In the Fall of 2008, I decided to construct a formal research project on the *Movement Matters* Program that I had been developing over the past few years which would ultimately allow me to bring forward quantitative testing measurements and uncover the narrative experiences of two students who were involved within the program.

### **New Beginnings: Transformations in Room 27**

In August 2007, after months of research into exercise, behavior, and academics, I transferred to a new high school as a special education teacher at River City High School (RCHS). I was a teacher coming from an elementary school and a Structured Success classroom was created for me as the ‘Behavior Management Specialist’ with the grade 8’s. I felt that I had a standard to live up to and was under the microscope to see if I really could change the students’ behaviors. Looking back, I wonder if these teachers were actually holding me to this high standard or was I doing this to myself? Was I putting pressure on myself to perform in a certain way when in fact no one was actually taking a second look at me?

Regardless, I was new and I was doing new things. I started out as the ‘Structured Success’ teacher in Room 1 inside a very large, old school. Room 1 is in the basement with one tiny window and pipes labeled ‘ASBESTOS’ lined the ceiling. The basement was referred to as ‘the dungeon.’ This is where the new teacher with the new program was placed.

I was not sure exactly how I would put all of my research into action at this new school, in my tiny classroom. I approached my principal early in the school year with the idea of bringing treadmills and stationary bikes into the school to research the relationship between the brain, behavior, and academics. He supported the idea and I began my plans on where to put the equipment I had acquired and what exactly the program would look like. I had acquired nine

treadmills and eight stationary bikes from an owner of a local gym who was aware of the brain research I had been uncovering. The equipment was in storage until we could secure a space at RCHS to put it that would be practical and safe.

In the meantime I was taking my students for walks first thing in the morning or afternoon, but this was not an ideal set up. Some youth were athletic and eager and were able to walk briskly, while others were overweight, obese, and lethargic. There would be huge distances between the first student and the last student, which brought supervision issues as well as competition into the equation. However, it was better than nothing.

It was decided we would wait until the next school year to proceed with the program with the equipment in Room 27. Room 27 was the lecture theatre style classroom shared by three veteran teachers, the hosting room for staff meetings and important division meetings, and also a community room used for evening yoga and dance classes. Room 27 is THE room to have with its grand size, high ceilings, private office, and direct entry to the gymnasium. We would deal with the technicalities, such as where these teachers would move, where meetings would be hosted, and where community events would held, closer to the next school year.

In the meantime, a teacher on staff was very excited about the idea of the program and took it upon herself to ask the teachers in Room 27 if they would mind swapping classrooms with me, immediately? Luckily, these teachers were excited about the idea of having their very own classrooms, one that they would not have to share with anyone else and were willing to do it that weekend. I felt very fortunate.

### **On Your Mark**

The transition between Room 1 and Room 27 began and the majority of my students became excited. While most of my students were supportive and excited about the new

classroom and the idea of treadmills in the classroom, a few were not supportive at all. Change is not only something that my colleagues were apprehensive about, but so were a few of my students. They liked the dungeon; after all, we were close to the bathroom and none of the ‘big kids’ ever bothered them down there. These Grade 8’s, were fish out of water in a high school. They knew they did not belong in an elementary school anymore, but did not fit in (yet) at the high school. The thought of added physical activity was not appealing to several students as well. Then there was Brandon, “This just doesn’t make sense! It won’t help! It won’t make me smarter! I won’t do it! This is bullshit!” (Memory reconstruction, January, 2007)

The equipment was installed the last week of January and we immediately began our journey of an integrated academic and physical activity class called *Movement Matters*. *Movement Matters* was a science-based program designed to improve academics, behaviors, and fitness. The premise of the program was that an academic stimulus is offered directly following physical activity during academic time. The student participants were challenged to raise their heart rate to between 65% and 75% of their maximum heart rate and maintain that for 20 minutes. I chose the name *Movement Matters* because I felt the uniqueness of the program deserved a name of its own. Room 27 was not just a classroom anymore and it was not a fitness room. The name *Movement Matters* was metaphorical and referred to the importance of movement and/or as matter being the substance of which all physical objects consists.

Monday, February 4, 2008 was the first day with the equipment in Room 27 at RCHS. It was exciting and frustrating at the same time. Some of the youths were eager to get on a treadmill and set the speed at the maximum 12mph. As excited as I was at their eagerness, I was also scared of an accident if they could not keep that speed up. Some of the youth wanted to spend entire classes on the equipment, which made it difficult for me to facilitate a lesson. Other

youth refused to get on a bike or a treadmill. It was a battle with four students from the beginning. Two refused to go on the equipment stating, “This is stupid! Why the hell should I do this? This is ELA (English Language Arts) class, why would I get on a treadmill? I’d rather go to the office than do this” (Memory reconstruction, January, 2007). After two weeks, two of the hesitant students eventually bought in but only if I would get on a treadmill beside them. They challenged me to race them, which was their way of challenging and shaping our relationship.

Getting on the equipment and experiencing a different way to approaching class facilitated relationships to develop between students as well. Cory was the leader in the class and what he did, the others followed. Fortunately, I had a great relationship with Cory and he, like myself, loved being active. He struggled academically, so replacing 20 minutes of ELA on Mondays, Wednesdays, and Fridays with 20 minutes of cardiovascular activity was optimal for him. We got on the treadmill side-by-side and sometimes we raced and other times we walked and talked, made connections, and bonded. Offers for races against me and the other students were made. I now had a core group of students on the treadmills and the others started to follow. The two who had initially refused to get on the equipment decided to give it a chance after three weeks. However Brandon, one of the two, maintained:

I know this isn’t going to work. I know this isn’t going to do anything. Just because some guy from Harvard says it’s going to work doesn’t mean that it will.

I am going to try this because I am bored. (Memory reconstruction, January, 2007)

It was Cory who convinced the last student to join us, “Come on Blake, just do it! This is fun!” (Memory reconstruction, January, 2007)

Not all students wanted or were able to do 20 minutes of exercise at a time. Some started with two minutes and worked their way up to the optimal 20 minutes. Others only wanted to do

10 minutes at a time. Within the remaining four months of school, all of the students were completing their 20 minutes at the desired 65% of their maximum heart rate. The physical successes were remarkable and for most, unbelievable! Not only did their cardiovascular levels improve but their fitness levels improved due to the strength training they also did in math class twice a week for 20 minutes. On average students improved in their push-ups by 277%, sit-ups by 224%, sit and reach by 21% and experienced a decrease in body mass index (BMI) by 5%.

### Grade 8 Fitness and BMI 2007/08

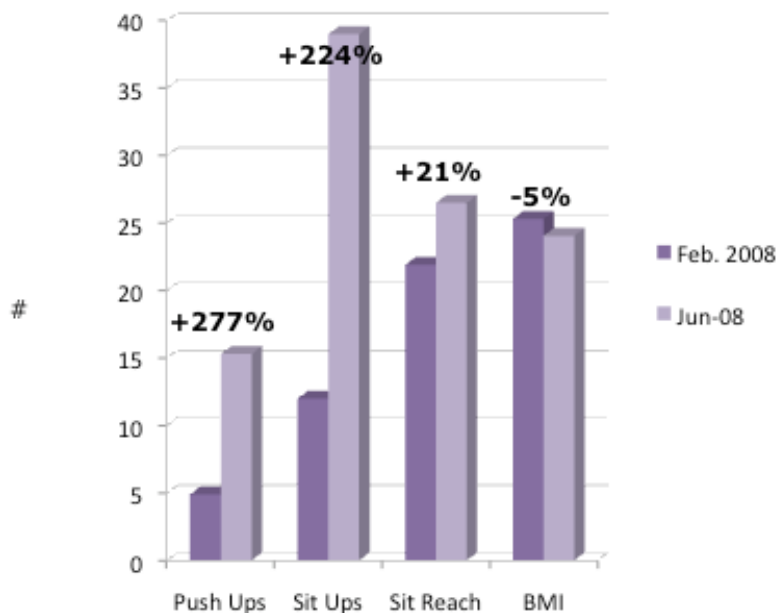


Table 1: Grade 8 Fitness Levels 2007/08

In the first year of the program, which was only a four-month trial period, students' academics improved an average of at least one full grade level in reading, writing, sight words, and math. The resource teacher pre-tested the students in January and post-tested the students in May. She remarked, "I have never seen anything like this!" (Memory Reconstruction, June 2008)

The 2008/09 school year yielded similar outcomes. This time the program ran the entire school year and involved seven classes including grade 8's, 9's and a resource group. RCHS houses two grade eight classes, and four grade nine classes. One of the grade eight and grade nine classes were kept as control groups while the other classes participated in *Movement Matters*. The only thing different in the class' day was the replacement of 20 minutes of ELA curricular time with 20 minutes of cardio in their target heart rate zones for the *Movement Matters* groups. The resource teacher used the Kaufman<sup>4</sup> test and administered pre-tests in September and she administered the post-tests in June. The difference in the pre-tests and post-tests for the grade eights included, the *Movement Matters* group scored on average 59% better in reading, 91% in their sight words, 21% in math, 245% in writing, and an overall improvement of 104%. The control group, who spent the entire 45 minute ELA period doing academics, scored 7% better in reading, 1% better in their sight words, regressed by 2% in math, regressed by 52% in writing, and an overall regression of 12%.

The grade nine scores produced similar positive results. The pilot group of grade eights (from the first year of *Movement Matters*) was kept together for grade nine and their scores improved again. A 36% increase in reading, 43% increase in sight words, 12% increase in math, 30% improvement in writing and an overall increase of 30%. A group of grade nines who were new to the *Movement Matters* program had increases of 23% in reading, 26% in sight words, 23% in math, 60% in writing and overall increase of 33%. The random group of grade nines who spent the ELA period doing academics scored on average 9% better in reading, 7% in sight words, regressed 2% in math, regressed 13% in writing and overall improved on average of 0.30%. So, after two years of researching the replacement of 20 minutes of academic time with

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<sup>4</sup> The Kaufman Test of Educational Achievement, Brief Form, Second Edition is an individually administered measure of academic achievement for examinees aged 4½ through 90 that assesses the achievement domains of reading, mathematics and written language.

physical activity every other day, the results strongly suggested that there is not an academic loss despite perceived loss of curricular time and students who did not participate in *Movement Matters* regressed academically throughout the year.

According to Ratey (2008), timing is important. He states improved concentration and impulsivity can last for three to four hours. But the optimal window for neurogenesis and neuroplasticity<sup>5</sup> to occur, an academic stimulus needs to be offered within the 90 minutes following the physical activity.

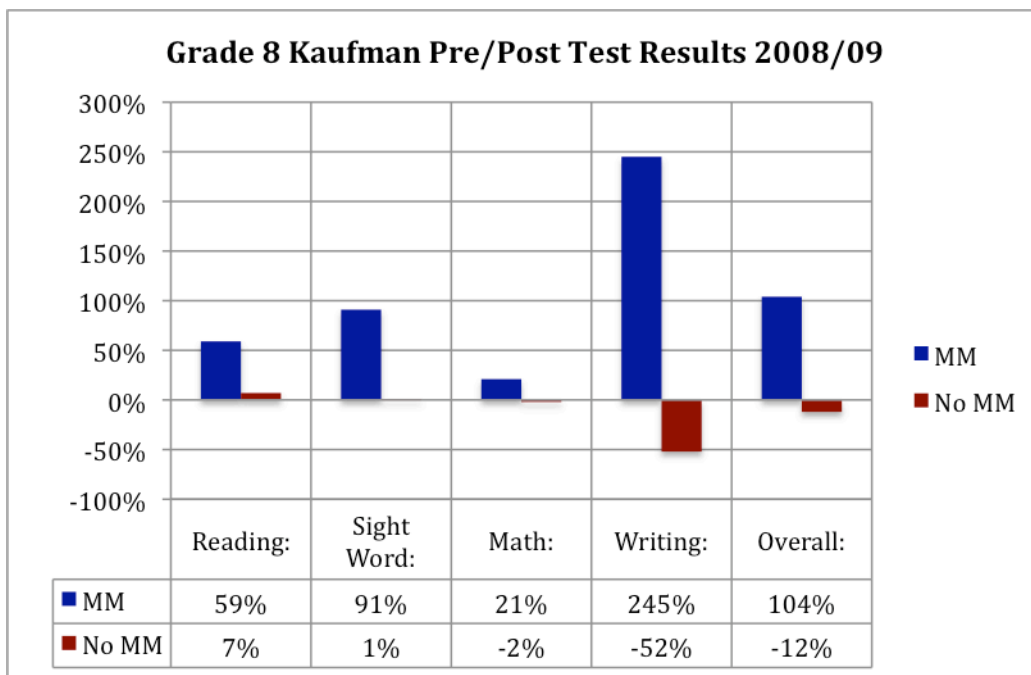


Table 2: Grade 8 Kaufman Pre & Post Test Results 2008/09

<sup>5</sup> Neuroplasticity refers to the ability of the human brain to change as a result of one's experience, that the brain is 'plastic' and 'malleable.'

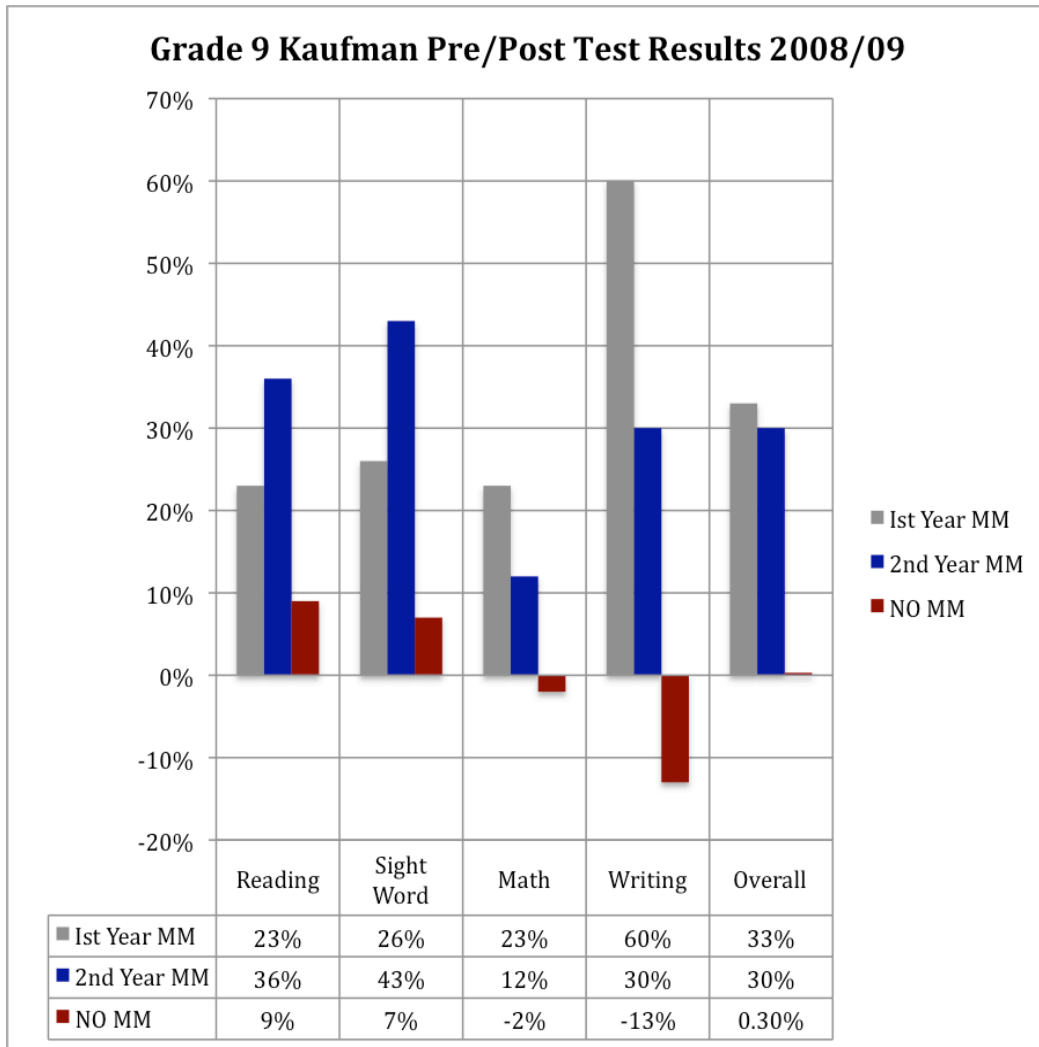


Table 3: Kaufman Pre & Post Test Results 2008/09

## Emerging Stories

### Brandon's Experience

“I am way better at Math than I used to be...and it gives me some time to exercise.” (Hurko, 2009, April 22), reports Brandon during a CBC interview. Brandon attends RCHS as a result of being diagnosed with a Non Verbal Learning Disability and Pervasive Development Disorder; a high functioning Autism or mild Aspergers. Upon arrival at RCHS, Brandon lacked motivation to participate in physical activity, PE, complete schoolwork, and maintained an incredibly stubborn and very defiant attitude towards teachers. The breakthrough with Brandon



came when in April 2008, I shared information with the class on understanding food labels; specifically illustrating that because a label says trans-fat free does not mean that it does not contain trans-fats. Brandon was very upset with the newfound knowledge and proceeded to write a journal entry about how he felt on this matter. Prior to this, Brandon used to say every day that the concept of *Movement Matters* was ‘stupid and was not correct.’ After the trans-fat breakthrough, Brandon started to trust me and develop a relationship with me while bonding over the government endorsed marketing ploys in nutrition.

When Brandon finally decided to participate, he could not stay on a bike for more than two minutes. Within a couple weeks, he was riding the bike for five minutes. By the end of June, Brandon would bike for 20 minutes switching back and forth between level three and four, and had increased the incline on the treadmill by 3% for the entire 20 minutes. He also made remarkable gains in strength and endurance improving from one to 12 pushups and one to 100 sit-ups in four months. Using *Movement Matters*, Brandon developed coping skills using physical activity as a means for controlling his impulsive behaviors. Disciplinary issues reduced significantly and he went from being sent or taking himself to the office or Support Room<sup>6</sup> at least once a week to only once since commencing *Movement Matters* during the last four months of school.

### **Kevin’s Experience**

Kevin attended RCHS for the Grade 8 program because of social and academic struggles in his former elementary school. He was diagnosed with ADHD and he was on medication. Initially, Kevin was a behavior concern and his attendance was very poor. His mother contributed to his poor attendance by clearing his absences saying he was at home ill. He would

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<sup>6</sup> Students who are experiencing difficulty with school expectations may be asked to go to the support room to problem solve and develop a plan of action.

miss up to two weeks at a time with colds and the flu. All of his absences caused gaps in his learning, but when he worked hard and tried at his academics, he was capable of performing at grade level. Pre-tests were performed and Kevin scored at a Grade 7.6 in Language Arts in his sight words. Four months later, his post-test scored at a grade 12.6 level. Kevin was receptive to the idea of participating in *Movement Matters* and eager to maintain his target heart rate. He also enjoyed strength training and reported he started lifting weights at home and did additional push-ups and sit-ups almost every night. Prior to *Movement Matters*, Kevin disclosed that had never exercised before because he thought the only way to be active was through sports. Because his family struggled financially, his behaviour problems, and that he “didn't fit in with the 'jocks'” he felt that playing sports was not an option. He still did not want to play organized sports, but admitted to being more open-minded regarding playing sports in gym or learning skills in PE. Prior to *Movement Matters* his mother would drive him to school and pick him up every day but after he started the program he and a classmate biked to and from school daily. The approximate distance was three miles (5 kilometers each way). In the first half of the year, Kevin was sick at least once a week, would fall asleep, or was not focused in the class the majority of the time but after starting the program, his overall health and attention improved and he was only absent one day due to sickness in the last 10 weeks of the school year.

### **Belief, Need and Passion for *Movement Matters***

I knew we needed added physical activity because I believed our society in general and our children in particular, could benefit greatly from the benefits of health-and-wellness-based PE and activity programs on a daily basis. Trudeau & Shepard (2008) have shown that high quality PE programs result in improved physical fitness levels, body image and self-esteem, enhanced academic performance, and a reduction in disciplinary issues, and that time dedicated

to fitness pursuits does not contribute to lower grade scores but quite the contrary. As Dr. John Ratey (2008), an expert on exercise's impact on the brain from Harvard Medical School says, "The greatest fallacy in American education today is that dropping PE will improve academic performance." In fact, Ratey goes on to say that "exercise is the one thing we know that optimizes brain function. It's so good, it's like Miracle-Gro" [for the brain] (Exergame Fitness, June 9, 2009).

According to Dr. William Klish, professor of pediatrics at Baylor College of Medicine, "Children today have a shorter life expectancy than their parents for the first time in 100 years." Given the medical and technological advancements of the last several decades, this is a frightening but powerful statement. Dr. Narayan, diabetes epidemiologist for the Centers for Disease Control and Prevention (CDC) stated, "One in every three U.S. children born after 2000 will become diabetic unless many more people start eating less and exercising more." I think former surgeon general, Dr. Richard Carmona, summarized the situation the best when he said, "As we look to the future and where childhood obesity will be in 20 years; it is every bit as threatening to us as is the terrorist threat we face today. It is the threat from within" (PE4Life, 2007).

When one considers the body and mind connection, the rampant childhood obesity epidemic and the overall decline in the health of students; it seems clear children need more physical activity along with the health and wellness knowledge to establish lifelong healthy lifestyle practices. Additionally, a growing body of evidence supports the idea that physical activity is integral to keeping cognitive processes functioning optimally (Taylor & MacQuees, 2007), which as this study demonstrates, is cited in assisting the academic achievement of students.

## Importance of Physical Education

Even though the benefits of physical exercise are acknowledged, PE in schools is often viewed as an extracurricular activity and is one of the first curriculum areas to be cut back or eliminated due to academic curriculum needs or financial restraints. If there is evidence that PE has a direct and positive effect on important educational domains such as reading and mathematics, PE may garner more curricular respect and be seen as a vital component in students' academic success.

Policy makers need to make difficult decisions about where to spend public funds and administrators need to make decisions about where to focus resources in a climate of academic accountability. A proven relationship between physical fitness and academic achievement could be used as an argument to support, retain, and perhaps even improve PE programs and implement *Movement Matters* programs.

It is worthwhile to mention that *Movement Matters* is not a PE program but rather as a supplementary program. According to PHE Canada<sup>7</sup>, physical activity is any movement of the body that expends energy. It is an unstructured voluntary movement of any type. PE is an important part of the school curriculum and is specific, structured, and progressive. It is designed to help children and youth develop the knowledge, skills and attitudes to be active and healthy for life. A child in a quality PE class develops an understanding of physical movement, called 'physical literacy,' that leads to lifelong, healthy, active behaviours (PHE Canada, 2010). *Movement Matters* has been effective in improving as students' fitness and confidence levels. Participation in daily PE at RCHS has improved as a result of improved fitness and confidence. Both Brandon and Kevin disliked PE in grade 8 despite my best efforts to make it a fun yet

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<sup>7</sup> PHE Canada is Physical & Health Education Canada is the national professional organization for physical and health educators.

physically challenging class. While I tried to engage my students in quality daily PE, Brandon would refuse to take part and insisted on walking around the perimeter of the gym while playing with a hula-hoop. Kevin very rarely participated in PE as he was too sick (Memory reconstruction, December 2007). Both Brandon and Kevin shared that they liked PE more now and were more likely to participate in PE class. I am not sure if this is a result of *Movement Matters*, and I regret that I never asked them. I suspect that because both boys became more fit and more confident, that they may have felt more comfortable in the gym.

According to the Childhood Obesity Foundation (2010), 60% of adults are overweight or obese, as are nearly 13% of children and the rates have steadily risen over the past decade. The Surgeon General said a key in treating obesity is not just a personal responsibility, but one shared by the community and industry. He called for a national attack on obesity like the one federal health officials declared on smoking. His recommendations include mandatory daily PE for every grade. PE has gradually been disappearing, particularly for older students. Just 6% of schools require it for high-school seniors. Schools must also provide healthier food options, and better enforce federal rules restricting students' access to junk food in vending machines present in most middle and high schools (USA Today, 2001).

### **Benefits of Strength Training**

A report from the Mayo Clinic released in 2008 claims many benefits to strength training for young athletes saying “Strength training is even a good idea for kids who simply want to look and feel better. In fact, strength training can put children on a lifetime path to better health and fitness” (Council on Sports Medicine and Fitness, Pediatrics, 2008). Done properly, strength training can: increase youth’s muscle strength and endurance, help protect their muscles and joints from injury, improve their performance in nearly any sport, from dancing and figure

skating to football and soccer. Strength training is for all children and youth because strength training can strengthen youth's bones, help promote healthy blood pressure and cholesterol levels, boost metabolism, help maintain a healthy weight and improve their self-esteem (Mayo Clinic Staff, 2008). Strength training has also been shown to have a beneficial effect on several indices, such as cardiovascular fitness, body composition, bone mineral density, blood lipid profiles and mental health (Council on Sports Medicine and Fitness, Pediatrics. 2008) for people of all ages including youth.

### **Emotional and Mental Health**

The neuroscience perspective reveals information that supports the concept of *Movement Matters*. For example, exercise is highly correlated with neurogenesis, the production of new brain cells and up-regulates brain derived neuro-trophic factors (BDNF) over the long term (Ratey, 2008). Neurogenesis is correlated with improved learning and memory and in addition, neurogenesis appears to be inversely correlated with depression (Nandam, Jhaveri, & Bartlet, 2007). This scientific data suggests that understanding the importance of neurogenesis and the potential impact curricular activities have on neurogenesis should be of primary importance for educators. Increased attention to more school-based PE and physical activity could positively influence cognition, health, memory, and mood of students.

While policy makers reduce physical activity, many administrators are unaware of the inverse correlations with adolescent depression. In the United States, each year one in six teens makes plans for suicide, and approximately one in 12 teens attempts suicide (Saluja, 2004). There is considerable evidence that indicates running can serve as an antidepressant (Bjornebekk, Mathe, & Brene, 2005).

Research suggests that participating in physical activity for 15-30 minutes in a target heart rate zone has the potential to increase the neurotransmitters: dopamine, norepinephrine and serotonin; the agents which are mimicked in attention deficit pharmacology (Ratey, 2008). These three neurotransmitters augment emotional stability, concentration, acuity, and tranquility. A deficiency in these neurotransmitters can result in depression, petulance, anxiety, rapid mood swings, impulsivity, and attention problems. Therefore, students may further benefit from exercise through an improved ability to concentrate and reduction in the incidence of impulsivity including those diagnosed with ADHD/ADD (Ratey, 2008).

The research between exercise and ADHD/ADD relationship is still in its infancy, but the increase in sedentary lifestyles and the diagnosis rate of ADHD/ADD in children corresponds. The increase in the number of children taking stimulant medications for ADHD/ADD may be lower if the subjects participated in regular, strenuous physical activity. In treatment studies comparing medication and exercise for ADHD/ADD, exercise prevailed as a safe and effective remedy promoting natural neuro-chemicals and BDNF instead of synthetically prescribed medications (Gomez-Pinilla, Vaynman, & Ying, 2008).

Mental illness is linked to more days off work than any other chronic condition. This costs the Canadian economy \$51 billion a year in lost productivity (Post Media News, 2010, September 9, p. A4). Carolyn Dewa, lead investigator in the study and Centre for Addiction and Mental Health's head of work and well-being research states, "Only a fraction of disability leaves are due to mental illness yet it costs employers the most. It is crucial that businesses make mental health and well-being a priority to prevent disability in the first place." If we start instilling these lifelong healthy habits in our youth via programs like *Movement Matters*, then

hopefully they will have tools and strategies necessary to avoid these conditions when they enter the work force.

Depression is an erosion of connections - in your life as well as between your brain cells, according to Ratey (2008). Ratey presents numerous cases of worldwide scientific research and studies to affirm that exercise, in fact, reestablishes those connections. He reports, "If everyone knew that exercise worked as well as Zoloft, I think we could put a real dent in the disease" (p. 123). In Britain, doctors now use exercise as a first-line treatment for depression, but it is vastly underutilized in the North America, which is a fact that Ratey says is a shame given the supporting studies.

### **Considering the Brain in Learning**

Schools, teachers, administrators, and curricula developers are well situated to provide learning opportunities to enhance student learning and affect change. *Movement Matters* is designed around the research that links our brain, physical exercise, learning outcomes and positive behavioral changes. Health related issues such as stress, exercise, nutrition, and social conditions are all relevant, brain-based issues that affect cognition, attention, classroom discipline, attendance, and memory. A new understanding is that all learning affects our growth and development as human beings. The current high-stakes testing agenda means some educators are eliminating recess, play, or PE from the daily school agendas. The value of exercise to the brain was highlighted in a cover story in Newsweek (March, 2007). More importantly, there are many studies examining exercise and brain connections in *The Journal of Exercise*, *Pediatric Exercise Science*, and *The Journal of Exercise Physiology Online*. The weight of the evidence is that exercise is strongly correlated with increased brain mass, better



cognition, mood regulation, and new cell production. This information was unknown a generation ago (Jensen, 2008).

Since our brain is involved in everything we do, another question is: is our brain fixed, or is it malleable? Is our brain shaped by experience? According to Ratey (2008), an overwhelming body of evidence shows our brain is altered by everyday experiences, such as learning to read, learning vocabulary, studying for tests, or learning to play a musical instrument. Therefore, it stands to reason that altering our experiences will alter our brain. This is a simple but profound syllogism: our brain is involved in all we do, our brain changes from experience; therefore our experiences at school will change our brain in some way.

### **Societal Needs for Activity**

Society is in the midst of an unprecedented crisis given that this is the first generation in recorded history where the natural life expectancy of youth will be less than their parents (Olyshansky, Passaro, Hershow, Layden, Carnes, Brody, Hayflick, Butler, Allison, & Ludwig, 2005). The cause may be a world that is undernourished and overfed compounded by sedentary lifestyles. Obesity in North America has progressed so rapidly over the years that continue to cause overwhelming public concerns. Being overweight and obese has become a global epidemic, affecting about a billion people worldwide. In 2004, approximately 6.8 million people between 20 to 64 years old were overweight and another 4.5 million were obese. The prevalence of obesity in children is even more alarming (Parliamentary Information and Research Service, 2005). In Canada, the rate of obesity in children has almost tripled in the last 25 years with over one quarter of Canadian children between the ages of 2 and 17 years old, currently overweight or obese (Statistics Canada, 2010).

According to the Heart and Stroke Foundation of Canada (2003), “the increasing number of overweight and obese Canadians now poses one of the greatest threats ever to public health in this country” (Hales & Lauzon 2010, p. 129). “Canadians are among the fattest people in the western world and getting chubbier each year,” reports the Organization for Economic Co-operation and Development (OECD) in a study on September 23, 2010. OECD is a government-funded policy think tank that reports, “60% of Canadian adults are overweight and roughly one in four (24%) are obese” (Post Media News, 2010, September 24, A3). The number of overweight and obese individuals is increasing worldwide at an alarming rate in both developed and underdeveloped countries. The rise in global obesity is thought to be a by-product of environmental and behavioral changes linked to economic development, modernization, and urbanization. Paradoxically, in many developing countries, obesity often coexists with a substantial level of malnutrition (NBA FIT, 2009).

“According to one estimate, insured children treated for obesity are approximately three times more expensive for the health system than the average insured child” (U.S. GAO, 2006, p. 6). Walter Bortz, M.D., working with a team of Stanford University researchers, has calculated that every excess pound of body fat on each U.S. citizen drains approximately \$25 from the American health-care system annually (NBA FIT, 2009).

More and more companies are encouraging their employees to take advantage of in-house gyms or health club memberships (Odiatu & Odiatu, 2009), and some health insurance companies reimburse clients for club fees. Their generosity is informed by studies showing that exercise reduces stress and makes for more productive employees. Researchers at Leeds Metropolitan University in England found that workers who used their company’s gym were more productive and felt better able to handle their workloads. Employees who exercise

regularly have fewer sick days. One study showed that active employees take 27% fewer sick days and report 14-25% fewer disability days than inactive employees (Plotnikoff, Fein, Milton, Prodaniuk, & Mayes, 2003).

The staff at RCHS, including my principal, agree as staff were also starting to reap the benefits of the daily exercise from *Movement Matters*. Staff would be in my classroom working out before school, during prep times, at lunch, after school, evenings, and weekends. Although constantly having staff in my classroom was a good problem to have, my principal decided that he would buy some equipment to place on the stage for the staff to use. This way when staff wanted to work out, they would not disrupt me as they were constantly in my room while I was trying to work, teach, or have meetings. Staff were challenging one another and becoming healthier, fitter, and more productive at a steady rate. While presenting to an Aboriginal Diabetes Initiative group about the positive effects of the *Movement Matters* program, my principal reinforced to the group that the program was not only benefiting students, but staff as well. He reported that the morale in the building was higher than it had been in years, staff had the fewest number of sick days in his five years in the building, he felt their productivity was higher and that staff had also shed a remarkable number of pounds (Memory reconstruction, Dec. 8, 2009).

### **Cultural Concerns**

Statistics support that the combination of a sedentary lifestyle, obesity, and related diseases is a global epidemic, however the First Nations and Inuit community profile indicates these groups have substantially higher risk and incidence. Children born to women who are obese or have diabetes have an elevated risk of developing type 2 diabetes later in life. Not coincidentally, Canadian Aboriginal women suffer from particularly high rates of diabetes and

obesity. Nearly half of all First Nations women will develop diabetes over their lifetime, likely during their reproductive years, a new study has found. Dr. Roland Dyck (2010) explored the onset of type 2 diabetes in First Nations men and women on Kahnawake Indian Reserve compared to non-First Nations men and women. Results of this study, speculated the appearance of type 2 diabetes among First Nations people can be attributed to a change in environmental factors rather than genetics. He stated: "Increasing rates of type 2 diabetes among Canada's First Nations people, for example, parallels an epidemic of overweight and obesity that has coincided with socio-cultural disruption and a loss of traditional lifestyle" (Stokell, 2010). These results and statistics are alarming given that as at least 85% of the students at RCHS are First Nations and the daycare for our students' is full with a long waiting list.

Our youths' future is bleak if current trends remain unchanged. The rate of diabetes in Canada is growing faster than our bellies, and statistics like those in Kahnawake (2010), will apply to more and more communities across Canada and around the world. Diabetes is a global killer amongst Western societies, and our lifestyles must change in order to prevent a health and economic crisis. However, despite the dreary forecast, even the smallest changes to diet and lifestyle can make a large impact.

*Movement Matters* is a simple yet effective solution to this epidemic. Within a month of starting the program, a student who had been diagnosed with pre-diabetes was cleared of all her symptoms and diagnosed pre-diabetes free by her family doctor. She exercised in the *Movement Matters* optimal target heart rate zone for twenty minutes every other day and shortly thereafter started eating healthier as she felt the positive effects and noticed the weight being shed. She boasted, "I feel better, I look better, and I am sleeping better. I have lost 15 pounds and have

started taking my family for walks around the neighborhood. It is something we can do together and it doesn't cost us money" (Memory reconstruction, March 2009).

The human race continues to battle a variety of plagues such as malaria, HIV/AIDS, and cholera that claim millions of lives annually (History of Plagues and Epidemics, 2001). The latest epidemic of obesity and related disease surpasses all other plagues combined. The Californian Journal of Health Promotion says: "Childhood overweight and obesity has been compared to the threats of bio-terrorism and small pox and has been called the fastest growing, most threatening disease in America" (Singh & McMahan, 2006, p. 207). The condition of visceral fat accumulation has become so pervasive that in 1998 the WHO was forced to coin the term Metabolic Syndrome X to describe the disease of the new millennium (Parliamentary Information and Research Service, 2005). The WHO, which refers to the escalating global epidemic of obesity as 'globesity,' estimates that there are more than one billion overweight adults globally, of who at least 300 million are obese (Parliamentary Information and Research Service, 2005).

### **Physical Activity and Addictions**

The National Institute on Drug Abuse defines addiction as a compulsion that persists in spite of negative health and social consequences. Plenty of people use and abuse drugs, but only relatively few become addicts. While dopamine in the reward center creates the initial interest in a drug or behavior and provides the motivation to get it, what makes addiction such a stubborn problem is the structural changes it causes in the brain (NIDA, 2010, September 20). Exercise is another solution to addictions because it elevates the dopamine levels in our body naturally, which then improves mood, motivation, feelings of wellness, and attention. Although Brandon and Kevin, the youth mentioned earlier, are not battling drug or alcohol addictions many students

at RCHS do have this problem. Many students come to Room 27 before break or lunch to do five to 10 minutes of the recommended physical activity to stave off a nicotine craving. I wonder if *Movement Matters* helped to give a few students the boost they needed to enter into rehabilitation centers to combat their drug addictions. After getting off the treadmill, a student shared with me that he would not be at school the following day because he needed to ‘go away for a couple of months.’ What that meant was that after several unsuccessful court-ordered rehabilitation stints, he was voluntarily entering a detoxification program. In the previous month to his departure he had great attendance and participation in the *Movement Matters* program. Two months later, this same student walked into my classroom and declared he was clean, wanted to stay that way, then asked if he could get on a treadmill (Memory reconstruction, November, 2010).

Ratey (2008) explains:

Researchers looking at fetal alcohol syndrome have shown that exposing unborn rats to high levels of alcohol dramatically reduces the birth of new brain cells in the hippocampus. Studies of adult rats exposed to alcohol before birth suggest that they have difficulty learning. The exciting news on this front is that both exercise and abstinence from alcohol not only stop the damage but also reverse it - increasing neurogenesis and thus re-growing the hippocampus of adult rats. In humans, researchers have recently shown that abstinence reverses some of the neuronal damage caused by prenatal exposure to alcohol, and we already know that exercise rebuilds the alcoholic brain by increasing neurogenesis. (p.187)

Exercise counteracts anxiety and depression directly and can have a huge impact on any form of addiction, as both of these mood states undermine treatment. A recovering addict who is

feeling anxious or hopeless is much more likely to slip in his or her determination and ability to quit. People are more impulsive when they feel lousy (Ratey, 2008).

### **Lasting Thoughts**

I am continuously asked how I motivate my students to get on the equipment and how I motivate them to stay on it. I asked Brandon this question, although I suspected I knew the answer. He told me, “I am doing it because I want to do it. I feel better when I exercise and *Movement Matters* allows me to be active. I focus better on my work and my math is easier” (Field notes, June 2, 2010). Similarly, in *Why We Do What We Do: Understanding Self-Motivation*, Edward Deci (1996), wrote:

The questions so many people ask – namely, ‘How do I motivate people to learn? to work? to do their chores? or to take their medicine?’ – are the wrong questions. They are wrong because they imply motivation is something that gets done to people rather than something that people do. (p. 32)

The goal of *Movement Matters*, to instill lifelong healthy habits that students are intrinsically motivated to accept and apply to their lives. Even the most difficult and stubborn students have found successes with the program whether it is academically, behaviorally, physically, emotionally, or with addictions. It is simple and inexpensive. Brandon said, “this isn’t rocket science, why isn’t everyone in this city, no wait, in the world, doing this program. It really works!” (Field note, May 2010)

### **Recess**

After two years of running the program successfully, I took a leave of absence in October 2009 from teaching for five months but I would often return to the school to visit students. I was surprised and disappointed to discover the majority of my students who had been successful in

the program were no longer participating. I could not understand what had happened. What had changed?

During a visit in December, two months after my leave began, I found my classroom completely empty of students. I searched the school for some familiar faces to ask why Room 27 was empty. I received a variety of responses that included, ‘I hate Mr. Wolfe,’ ‘That guy in there is a loser,’ ‘That guy stinks,’ ‘It stinks in there,’ ‘When are you coming back?’ and ‘I will go on the equipment when you come back’ (Memory reconstruction, December 2009).

These visits back to my classroom and these conversations with my students made me wonder if *Movement Matters* really was the secret to all my successes over the previous two years? If it wasn’t the program, I wondered what was making all of these profound changes in the students? I took this wonder home and called my mom. She asked if I had considered the relationships I had built with the students and the impact this had? This conversation led me to my wonder; what impact do relationships have on the *Movement Matters* program? Was the program solely responsible for the positive changes in my students or was it a combination of physical activity and a warm welcome inviting classroom? Were positive relationships more likely to transpire because of the treadmills and bikes, and if so, why was this?

As I moved forward I carried more questions and felt the desire to learn about my students’ experiences in this program. I carried with me, the importance of the relationships built in *Movement Matters* between my students, myself, and our environment that contributed to the success of the program and the ultimate well-being of my students.



Chapter three explores the experiences of myself and the two youth involved in *Movement Matters*. I had three planned interviews that branched into several conversations with each youth where I inquired into their stories to live by. The narrative inquiry methodology and why my rationale for using narrative inquiry as an approach is explained in this chapter.

Clandinin and Connelly wrote that knowing "relationship is key to what it is that narrative inquirers do" (Clandinin & Connelly, 2000, p. 189). Noddings (1986) explores the ethics of care and relationships to schooling, welfare, and to learning and teaching within families and local communities. She demonstrates the significance of caring and relationship both as an educational goal, and as a fundamental aspect of education.

Dewey insists that educators must first understand the nature of human experience and my wonders were all relative to the youths' experiences. The two youth and their experiences are highlighted in this chapter as well as how *Movement Matters* partially shaped possibilities for Brandon and Kevin's unfolding identity and, therefore, the life curriculum they could see for themselves. Engaging in this narrative inquiry with Brandon and Kevin showed me that the stories each of them lived and told were not linear, when I had initially thought they were linear.

### **Chapter 3: Narrative Inquiry of Two Youths Involved in *Movement Matters***

#### **Introduction**

*"I feel the most important thing that comes out of this program is the interaction between everyone. Like between the students, the teachers... Everybody is talking to each other now."*  
(Field note, May, 2010)

As I entered the third year of the *Movement Matters* program, I was convinced I had found the secret to success; the ultimate solution to improving students' academics, behavior, self esteem, attendance, and fitness levels. From my observations, *Movement Matters* had also

decreased students' impulsivity, high-risk behavior, and petulance in just two years. Other benefits I observed included several students quitting smoking, significant weight loss in some of the obese and overweight students, a student who had previously been diagnosed with pre-diabetes was cleared of all symptoms, and a student replacing his need for prescribed Ritalin with specific physical activity. I was convinced that *Movement Matters*, which is 20 minutes of physical activity three times a week at 65% to 75% of your maximum heart rate followed by an academic stimulus, was solely responsible for the benefits I was witnessing in my classroom. I had not realized the impact *Movement Matters* curriculum would have on relationship building. This may have escaped my awareness because it was not a part of the planned curriculum. Regardless, as an unexpected benefit, it was potentially there all along, and I was led to discover this as I lived the program.

### **Beginning the Methodology Journey**

Narrative inquiry is the process of gathering information for the purpose of research by attending to experience understood narratively. The researcher then writes a narrative of the experience. Connelly and Clandinin (1990) note that, "Humans are story telling organisms who, individually and collectively, lead storied lives. Thus, the study of narrative is the study of the ways humans experience the world" (p. 2). In other words, people's lives consist of stories.

An interest in youth's identity within *Movement Matters* led me to Connelly and Clandinin's (1999) concept of stories to live by as being a place where context, knowledge, and identity can be understood narratively. I am drawn to the notion that people in narrative inquiry "are looked at as embodiments of lived stories" (Clandinin & Connelly, 2000, p. 43). When discussing narrative as a way of understanding experience Clandinin and Connelly (2000) wrote, "[o]ur excitement and interest in narrative has its origins in our interest in experience" (p. xxvi),

and that experience can be captured by the idea of the stories people live. The youths' involvement in *Movement Matters* was what I wanted to capture. I wanted to learn of their experiences and was inspired by narrative inquiry.

### **Commonplaces of Narrative Inquiry**

Narrative inquiry is a way of understanding and inquiring into experience through “collaboration between researcher and participants, over time, in a place or series of places, and in social interaction with milieus” (Clandinin & Connelly, 2000, p. 20). Three commonplaces of narrative inquiry, temporality, sociality, and place, specify dimensions of an inquiry and serve as a conceptual framework. Commonplaces are dimensions that need to be simultaneously explored in undertaking a narrative inquiry. Attending to experience through inquiry into all three commonplaces is, in part, what distinguishes narrative inquiry from other methodologies. Through attending to the commonplaces, narrative inquirers are able to study the complexity of the relational composition of people's lived experiences both inside and outside of an inquiry and, as well, to imagine the future possibilities of these lives.

Using Dewey's work as the foundation of this narrative inquiry space, Clandinin and Connelly (2000) wrote:

Our terms are personal and social (interaction); past, present, and future (continuity); combined with the notion of place (situation). This set of terms creates a metaphorical three-dimensional narrative inquiry space, with temporality along one dimension, the personal and social along a second dimension, and place along a third. Using this set of terms, any particular inquiry is defined by this three-dimensional space: studies have temporal dimensions and address temporal matters; they focus on the personal and the social in a balance appropriate to the inquiry;

and they occur in specific places or sequences of places. (p. 50)

The personal-social dimension of this narrative inquiry space moves me to inward and outward questions, wonders and connections—inward "to the internal conditions, such as feelings, hopes, aesthetic reactions, and moral dispositions" (p. 50) and outward "toward the existential conditions, that is, the environment" (p. 50). Traveling backward and forward I attend to "temporality-past, present, and future." Place "attends to the specific concrete physical and topological boundaries of inquiry landscapes" (pp. 50-51).

Stories can cross generational and cultural boundaries; they can offer a common point of entry into an experience. "Telling stories is a natural part of life, and individuals all have stories about their experiences to tell others. In this way, narrative research captures an everyday, normal form of data that is familiar to individuals" (Creswell, 2008, p. 511). Richardson (1997) explains:

Story of a life is also more than the life, the contours and meaning allegorically extending to others, others seeing themselves, knowing themselves through another's life story, re-visioning their own, arriving where they started and knowing 'the place for the first time.' (p. 6)

### **Narrative Inquiry as a Method**

Narrative inquiry often focuses on the experience of one or a few participants rather than those of a larger group. One of its goals is to give voice to those whose stories have been previously untold in educational research (Creswell, 2008). Narrative inquiry emphasizes relationships or collaboration between the researcher and others (Pinnegar & Daynes, 2007). The researcher may check the emergent stories and negotiate their meanings with participants (Creswell, 2008):

By conducting narrative inquiries, researchers establish a close bond with the participants. This may help reduce a commonly held perception by practitioners in the field that research is distinct from practice and has little direct application.

Additionally, for participants in a study, sharing their stories may make them feel that their stories are important and that they are heard (p.511).

Once the participants were chosen they told me they were excited to talk about their *Movement Matters* experiences with me. They wanted to know why I picked them as participants and I explained it was because I felt we had good relationships and that their stories were worth telling (Memory reconstruction, May, 2010). I wanted to choose youth who were with me from the beginning of the *Movement Matters* journey at RCHS. I felt they understood the program the best and as the inaugural group, they may have more to share and could convey their experiences of moving to Room 27 in the middle of the school year. I also felt they had the ability to articulate their experiences. I had also chosen a third student, but unfortunately, he was experiencing too many personal difficulties and dropped out of school just before the interviews were to start.

I believe the most important aspect in working with students is relationships and an important aspect of narrative inquiry is relationships. Knowing "relationship is key to what it is that narrative inquirers do" (Clandinin & Connelly, 2000, p. 189) led me into conversations about relationships I shared with students, guardians, and teachers, relationships which, I build upon in the unfolding of my narrative inquiries. My research has potential for uncovering or making visible tension-filled moments where school stories bump up against youths' and families' lives. Because of this potential, I worked with students and their families who would not shut down but, rather, who would take up conversations with me around these tensions. The

ethical considerations of the youths were of the utmost importance. Both youth and their guardians consented and signed consent forms.

### **Forms of field texts.**

During the time I spent researching, I explored a few different types of field texts. I kept field notes throughout the inquiry for each interview. “These ongoing, daily notes, full of the details and moments of our inquiry lives in the field, are the text out of which we can tell stories of our story of experience” (Clandinin & Connelly, 2000, p. 104). Clandinin and Connelly (2000) mentioned the importance of being the recorder of events outside of the event, or as a character within the event. I took minimal, essential pen and paper notes during the day in moments that lent naturally to the opportunity, and the majority of notes were written at day’s end in as much detail as could be remembered on my computer. Along with the descriptive field notes, I also maintained reflective notes. The reflective notes allowed me as an inquirer to watch outward and turn inward, essentially outwardly observing and inwardly reflecting (Clandinin and Connelly, 2000).

I used an audio-recorder for the interviews but they were quickly turned into conversations. Each interview started with the youth staring at the audio-recorder while providing me with limited responses to my planned questions. However, it did not take long for the youth to forget about the tape recorder and converse with me in a natural manner. As mentioned by Clandinin and Connelly (2000), “...conversations are marked by equality among participants and by flexibility to allow participants to establish forms and topics appropriate to their group inquiry” (p. 109). I appreciated this approach because it aligned with developing and maintaining trust and integrity with the individuals in the inquiry. I wanted the youth to see me as one who traveled on this journey along with them. I wanted them to see me as one who respected their

stories as individual and unique. Going into the inquiry I had created a list of general topics that I would be interested in discussing. Some of these included their thoughts around *Movement Matters*, both positive and negative, their experiences within Room 27, their understanding of the program, and their identity within *Movement Matters* and RCHS.

### **Negotiating relationships.**

Flexibility was important to me as the experience created new ideas and phenomena. The youths' relationships to other youths and the teachers within the school became an important focus as well as the way they positioned themselves within the school as a member of their school community. For me, flexibility in the conversations reinforced the concept that each youth's story emerged in different and equally important ways. Flexibility was evident in my conversations with the two youth in this inquiry as each youth had very different conversations with me. Brandon needed little structure and our interaction truly became a conversation emerging mainly from his thoughts. My questions for him were largely constructed from his previous statements. Kevin on the other hand needed more prompting and probing by me in order to sustain the conversation. I knew that I needed to have more scripted questions or discussion topics going into these conversations than with Brandon.

I opted to use an audio recorder during these conversations because by doing so I was able to be a participant in the conversation without having to concern myself with recording the dialogue by writing text (Clandinin and Connelly, 2000). For equality to be present in the conversations, as mentioned above, it was essential that I contributed equally to the conversation including being a listener. I attempted to do this by freeing myself from trying to capture the conversation via notes during the conversations. I had three, 45-60 minute long conversations with each youth, which allowed us to converse openly and to explore all of our questions and

answers.

### **‘Experience and Education’**

One of the major premises of John Dewey’s (1938) work is about experience. *Movement Matters* provided my students with experiences and through narrative inquiry I was able to explore those experiences. He insists that educators must first understand the nature of human experience. My wonders were all relative to the youths’ experiences.

According to Dewey (1938) good education should have both a societal purpose and purpose for the individual student. For Dewey, the long-term matters, but so does the short-term quality of an educational experience. Educators are responsible therefore, for providing students with experiences that are immediately valuable and which better enable the students to contribute to society. He argues that we need a theory of experience and that educators must first understand the nature of human experience.

Dewey's (1938) theory is that experience arises from the combination of two principles, continuity and interaction. Continuity is that each experience a person has will influence his/her future for better or for worse and these experiences have been shaped by our past and affect our present experience as well. Interaction refers to the situational and social influence on one's experience. In other words, one's present experience is a function of the interaction between one's past experiences and the present situation.

It is important to understand that, for Dewey (1938), no experience has pre-ordained value. The value of the experience is to be judged, by the individual, by the effect that experience has on the individual's present, their future, and the extent to which the individual is able to contribute to society. He says that once we have a theory of experience, then as educators, we can set about progressively organizing our subject matter in a way that it takes



accounts of students' past experiences, and then provides them with experiences which will help to open up, rather than shut down, a person's access to future growth experiences, thereby expanding the person's likely contribution to society. Throughout his work there is a strong emphasis on the subjective quality of a students' experience and the necessity for the teacher to understand the students' past experiences in order to effectively design a sequence of educational experiences to allow the person to fulfill their potential as a member of society. *Movement Matters* scaffolded curriculum-making possibilities for both the youth and me that attended to their stories to live by and their identity. *Movement Matters* enabled an experience, then as an educator, I set about progressively organizing subject matter in a way that took into account youths' past experiences. The youth were then provided with experiences that helped to open up, rather than shut down, their access to future growth experiences, thereby expanding the their likely contribution to society.

### **'The Ethics of Care and Education'**

When I started to analyze the research generated by this inquiry and in the writing of this thesis, I began to struggle, as there have been many 'big ideas' that shifted and interrupted my thinking. I felt as though there had been so much learning but I had to resign myself to the fact that I may have been wrong about *Movement Matters* being the 'ultimate answer.' Research interrupted my idea of what *Movement Matters* did for these youth and me. One of my 'big ideas' came from Nel Noddings (1986) when she wrote:

It should, indeed, be our goal in all of education to produce caring, moral persons, but we cannot accomplish this purpose by setting an objective and heading straight toward it.

Rather, we approach our goal by living with those whom we teach in a caring community, through modeling, dialogue, practice, and confirmation. (p. 502)

My experience has shown me depth in the layers of my participants' lives and their stories as they are lived out in the classroom. It is below the surface of what we see that youth are shaping their stories to live by, their identities. Their identities not only includes being caring and moral persons, but persons who believe they are strong, valuable members of a community to which they are capable of contributing their strength and value. An important point in Noddings' quote above is "living with those whom we teach in a caring community" (p. 502). Teaching should not be about separating student and teacher, or 'good' students from 'bad' students. It should be about living together, learning together as human beings in relation to one another, acknowledging the contributions that each member of the community can bring to the rest to enhance the teaching and learning that occurs within that community, that particular learning landscape. During our time together in *Movement Matters*, we were not student/teacher or good/bad; the relationships shifted and borders became more permeable so that teacher and students worked as partners. It is important to qualify the need for teachers and students to work together as partners. *Movement Matters* has helped to remind me of the value of partnerships and relationships. During *Movement Matters* guards lowered, music played and relationships formed over friendly conversations and challenges to elevate heart rates. What had happened the previous night or in the teachers' classroom down the hallway became irrelevant as we shared stories.

Shifting relationships brings me to another point that encompasses the 'big ideas' in my inquiry. I mentioned that teaching and learning needs to be considered as a human act in the state of relation between teachers and children, then the view of teachers and students also shifts. Teachers and students must not be reduced to being-as-things (Aoki, 2005). Aoki contended that teachers are stripped of subjectivity and humanness if they are viewed in this manner, as

instrumental, and I would argue likewise for students. In traditional education, students are also viewed in a somewhat instrumental fashion, as a ‘thing’ to intake information and reproduce it for evaluative purpose thus stripping the humanness from the children and youth in our classrooms. Brandon was a youth in my classroom to whom I was supposed to teach math and language arts. If my job as the teacher was limited to this objective and his production of adding fractions and writing Haiku poetry, the entire experience becomes one where we are each viewed as ‘things’ rather than humans in a relationship: humans with complex stories and years of experiences influencing the acts of teaching and learning.

Clandinin and Connelly (2000) explored the inquiry field and reminded me that in the midst of stories I need to be respectful of youths’ landscapes:

As researchers, we come to each new inquiry field living our stories. Our participants also enter the inquiry field in the midst of living their stories. Their lives do not begin the day we arrive nor do they end as we leave. Their lives continue.

Furthermore, the places in which they live and work, their classrooms, their schools, and their communities, are also in the midst when we researchers arrive. Their institutions and their communities, their landscapes in the broadest sense, are also in the midst of stories.

(pp. 63-64)

Aoki, Clandinin and Connelly, and Noddings remind me of the importance and vulnerability of the relationships with these youth. These conversations did not start and stop during the interview and I negotiated these relationships carefully. The negotiation of relationships with the youth participants is of utmost importance. These two youth were asked to be study participants because of the trust, respect, and communication we have for each other. They have been involved in *Movement Matters* since its conception and have had unique

experiences and results in the program based on data that was collected outside of this thesis, and were chosen based on this data and their diversity as students, as well as the positive relationships.

### **Coming to Know Brandon**

I met Brandon in my first year at RCHS. We were both new to the school and were each trying to find our way. In the next three years we both shifted which led me to many conversations and observations made visible in the following word image. Brandon's shifts were obvious not only to myself, but also the staff at RCHS, and his Grandma. My shifts were more subtle, but none-the-less, not unnoticed by the youths. In October 2010, a youth in Grade 11, who I had taught in Grades 4-5 and then again since Grade 9, shared with me that I had changed. He told me that I "used to be very mean and sort of like a drill sergeant" but now I was "fun and liked being in my class" (Memory Reconstruction, October 2010).

While writing my narrative accounts of Brandon and Kevin's unfolding life curricula, I began by reading and re-reading my field notes and transcripts of research conversations. From these field texts, I selected words and phrases to compose word images as interim research texts. As Clandinin, Huber, Huber, Murphy, Murray Orr, Pearce, & Steeves (2006) stated "creating word images is a highly interpretive process [because it may portray] a unidimensional account of... [a person's] unfolding stories over time [and that we realized] in this one telling there are multiple other possible tellings" (p. 99).

Included on this word image are my observations from my field texts and of Brandon from the previous three years.

Raised in Saskatoon  
By Grandma  
Older cousin lives with them too  
Mom visits sometimes

Would rather she didn't  
Complicates things

Attended same elementary school from K-7  
Hated it  
Was always in trouble  
Swore a lot  
Got in some fights  
Defiant  
Stubborn

Came to RCHS for Grade 8 due to behaviour issues

Dirty blonde hair  
Shaggy bowl cut  
Big eyes  
Wears sweat pants  
Big for his age – 6'1 & 220lbs

Few if any friends at school  
Socializes with staff  
Very friendly in hallways  
Eats lunch in the halls by himself  
Eats same lunch everyday – cheese whiz or peanut butter sandwich, granola bar & apple  
Corn pops for breakfast  
Chef Boyardee for supper  
Every day

Loves reading  
Loves sci-fi  
Talks a lot about death  
Very knowledgeable  
Hates Math  
Watches Colbert Show & Daily Show  
Wants to be called Texas Man or Death Con 9

Concerned with the economy  
Hates 'Hover Parents'  
Believes our society is in trouble  
Believes social issues are high right now

Believes he has been diagnosed with 'Acute Personality Failure Disorder'  
Actual diagnosis 'Pervasive Developmental Disorder'  
And 'Non-Verbal Learning Disorder'

Loves the annual Round Dance

Talkative  
Very friendly  
Respectful

(Interim field text, May 2010).

While I realized that my initial interpretations of Brandon as ‘defiant’, ‘disrespectful’ and often ‘aggressive’ remained with me, and were threaded throughout my memories, they are not threaded throughout my field notes. Brandon changed, he had matured, he was not defiant and aggressive and/or I had changed, I had grown and I had become a different teacher. Maybe I had come to see him differently? Would he have so willingly shared shifting stories of who he was and who he was becoming with me without these changes in both of us?

The experience of *Movement Matters* has enabled relationships amongst youths as well as the youths and myself that did not exist before. *Movement Matters* was a time when we turned the music on and shared stories with one another. Conversations about schoolwork, peers, families, and different social scenes were discussed. Other times, youths used this time to reflect and listen to his or her own music on their iPods.

Brandon initially refused to get on the equipment but finally decided to give it a chance. He said, “ I know this isn’t going to work. I know this isn’t going to do anything. Just because some guy from Harvard says it’s going to work doesn’t mean that it will. I am going to try this because I am bored” (Journal entry, February 2007). Brandon may have been setting up his boundaries by making these statements.

It did not take long for Brandon’s perceptions to shift. Initially, he did not have motivation to participate or complete schoolwork and maintained an incredibly stubborn and very defiant attitude towards staff. The breakthrough with us came during a Food Studies class when I shared information with the class on understanding food labels, specifically illustrating

that because a label says trans fat free does not mean that it does not contain trans fats. Brandon was very upset with the newfound knowledge and proceeded to write several journal entries about how he felt. He shared in these journal entries he felt betrayed by the government and these companies who were deceiving customers. It was this lesson that enabled Brandon to start trusting me. He was surprised that I had this ‘inside information’ and if I knew something about this conspiracy then I might know something about exercise and the brain. Prior to this, Brandon used to say every day that the concept of *Movement Matters* was ‘stupid’ and was ‘not correct.’ After the trans fat breakthrough, Brandon started to trust me and develop a relationship with me while bonding over the government endorsed marketing ploys in nutrition.

Initially, Brandon could not stay on a bike for more than two minutes. Within a couple weeks, he was biking five minutes and by the end of June, had increased the incline on the treadmill by 3% for the entire 20 minutes. He also made remarkable gains in strength and endurance improving from one to 12 pushups and one to 100 sit-ups in four months. Following *Movement Matters*, he developed coping skills using physical activity as a means for self-control/impulsivity. Disciplinary issues including being sent or taking himself to the office or Support Room reduced significantly from at least once a week to once over four months since commencing *Movement Matters*.

During the interview with Brandon, I was very surprised but excited to learn of his new perceptions of the program. I asked him what his favorite part of the program was and he said, “Um, my favorite part [of *Movement Matters*] is interaction.” When asked what his least favorite part of the program was, he replied, “There isn’t a lot to hate. I think a lot of schools kinda have a little too much thinking and not a lot of physical activity.” He went on to say, “Well, I think it [*Movement Matters*] somehow got everyone to get a lot more closer. Because, I don’t really

bump into those people that were in this class a lot, but when I do they are like, ‘hey dude, what’s going on?’” (Field note, June 2010). I asked him what he thought motivated him to get on the equipment? He told me, “I think I just did it because I thought it was going to be fun. Like I didn’t really put a lot of thinking in it, I just did it” (Field note, May 2010). When Brandon mentioned that he felt ‘everyone got a lot more closer,’ it made me reflect on my perceptions as well. When the youth were on the treadmills they were equals. Labels, disabilities, and disorders all seemed to disappear. The colour of skin, what side of the river they lived on, or if they were wearing a brand name piece of clothing was irrelevant. We all valued each others’ individuality.

As Brandon and I engaged in research conversations, he told passion-filled stories about how RCHS has been a positive experience for him now. I began to compose a narrative account of Brandon’s unfolding life curriculum filled with his passions for being a productive member of society due to the successes he had experienced at school. As Brandon shared his perceptions for his “changing” and essentially shifting as a result of being at RCHS, I asked him what he thought was responsible for the changes in him in our Grade 8 year together. He told me:

Well, I did a lot of soul searching and thinking about what I am going to get out of life if I continue to do this and I realized that I am not wanting to take the easy way out.

Personally I like to look at it [adversity] head on and say, it may end up this way but I am at least going to play it out. I think I looked at a lot of stuff and there were a lot of good people around me and I wasn’t entirely used to that. I wasn’t used to positive people. I was used to people walking around me and not giving a shit. (Field note, May 2010)

As I worked through the transcripts of our research conversations, I realized Brandon seemed to position his experiences in *Movement Matters* as pivotal in his identity making



(Huber, Keats Whelan, & Clandinin, 2003). By attending closely to how he described these life-changing experiences, I awakened to how Brandon had changed my perceptions of *Movement Matters* and the youth that I deemed ‘fixing.’ In our research conversations, Brandon looked backward, forward, inward, outward and across place (Clandinin & Connelly, 2000) from these experiences. Moving in these multi-directions, Brandon explored strands of interwoven story threads of his life curriculum as he shared these stories of his experiences within family stories, physical activity, art, economy, as well as teacher and school stories.

Returning to Brandon’s words, shared in the word image and throughout the field notes, I heard him telling me that as relationships developed and deepened between and among Brandon and others involved in *Movement Matters*, he became happier. He seemed to grow and began to restory<sup>8</sup> who he was and who he could become. He shared with me, “I am going to either become a researcher or start up my own little business” (Field note, June 2010). Brandon also shared why he decided to ‘change’:

Well, I just realized that it is pointless to continue with my defiant behaviour. I realized there was a lot of people kinda giving me support, well there was my grandma, there was you. I never had support before and it felt good. (Field notes, May, 2010)

Brandon’s story was composed with the influence of his experience in the *Movement Matters* classroom, my grade eight classroom, and all of the classrooms that came before. The dominant stories of school and this classroom influenced the way Brandon was telling and living his story to live by; creating tension as he discussed his experiences in the various classrooms. Both conversation and observation proved to surface the tensions he seemed to be struggling

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<sup>8</sup> To restory means to retell, or reinvent, an existing story.

with as he composed and recomposed his story to live by and positioned and repositioned himself on the classroom landscape.

As I consider Brandon's experiences, Dewey (1938) becomes essential in understanding the way that Brandon's story to live by has been influenced by teachers from his past and school experiences from the past. His story was changed and recomposed because of his lived experiences. Clandinin et al. (2006) pose that change occurs through retelling and reliving stories. Dewey placed emphasis on this social aspect of experience, the influence of his teacher, his peers, highlighting the idea that all human experience is social and one cannot understand the experiences of individuals unless the social aspect is explored. As Brandon mentioned his feelings about physical activity prior to grade eight, there was inevitably a retelling and reliving of his story that occurred because of his interactions in his elementary school. Brandon expressed the impact experience had on shaping his story to live by when he said, "They have diagnosed me with having an acute personality failure disorder," as a result of being defiant and angry to expressing, "I think I looked at a lot of stuff and there were a lot of good people around me and I wasn't entirely used to that. So I decided that I needed to change. I just realized that it is pointless." (Field note, May, 2010)

When Brandon first used the term 'acute personality failure disorder' I was shocked and asked what that meant. He told me, "It means that basic things that people can do, I might not be able to do, like speaking and writing." I asked him if that is what it was called and he said it was:

Something more fancy, but you make funny sounds and you can't really think straight. Autism? Well, except it's not necessarily Autism, it's something else like it. I just found that out a couple weeks ago when they sent a thing home saying I was suspended cause I got into that fight with Cody and they sent a letter home so that's how

I found out. I don't know if it was by a therapist or if people are just making assumptions? (Field note, June, 2010)

He told me that this bothered him and his Grandma said the letter and this diagnosis was, "Well, she said it was just bull. I agree with her" (Field note, June, 2010).

Brandon seemed again to be referring to Dewey's theory of continuity. Brandon identified that his experience in elementary school resulted in a lack of patience towards people who looked at him as being different because of his 'acute personality failure disorder.' He told and relived his story to live by, moving out of this place of tension. I sensed Brandon began to retell and relive his story to live by in the classroom because he began to attend to relational knowledge, that is, knowledge created with others, living alongside others (Hollingsworth, 1994). "The concept of knowing through relationship, or relational knowing, involves both the recall of prior knowledge and the reflection on what knowledge is perceived or present in social and political settings" (Hollingsworth, 1994, p. 77). Even though Brandon agreed with his Grandma when she said the 'acute personality failure disorder' label "was just bull" (Field note, June, 2010), he still had come to a place where he decided it was time to change and that is perhaps because he attended to the relational knowledge.

### **Coming to Know Kevin**

The following word image was created from field notes I wrote across Kevin's and my time together as well as observations from the *Movement Matters* program.

Dresses in jeans, t-shirts, & white sneaks  
Short hair  
Pale complexion  
Slender build  
Loves to work out and show off his muscles

Quiet  
Friendly

Polite  
Apathetic

Many friends  
Different groups of friends  
Appears confident enough to be alone

Argumentative  
Protective  
Confrontational

Attended RCHS in Grade 8 for behaviour reasons  
Has become accustomed to the modified curriculum  
Acknowledges he's being lazy  
Could handle a regular curriculum  
Knows he can do better in school  
Did not have enjoyable elementary school experiences

Shares about his desire to be active  
Loves to eat McDonalds though  
Thinks the treadmills will reduce his risk of a McDonald's induced heart attack  
Loves Twittering

Opens up about personal issues  
With his mom  
With his brother  
Of his own

Wants to move to Hawaii  
Wants to take his mom and sister to Hawaii for a trip  
And to meet Dog the Bounty Hunter

Argumentative  
Protective  
Confrontational

Quiet  
Friendly  
Polite  
Apathetic

Always sick  
Mom clears absences  
Bad headaches

Quiet

Few friends  
But sticks up for them and speaks up for them  
Doesn't smile a lot  
Very private  
Doesn't like to open up about himself.

(Interim research text based on field notes, May-June, 2010).

As made visible in the above word image, the time I have spent with Kevin at RCHS has been contradictory. He was once well known for being argumentative, confrontational and protective of his friends; who were usually unable or unwilling to stand up for themselves. He was now a youth that could go unnoticed due to his quiet nature. Kevin and I explored stories of who he was and who he is becoming as well as stories of him liking *Movement Matters* because he experienced it as fun:

Well I like it quite a bit cause it gives me time to think about issues; my personal issues and work and stuff like that. So it gives me time to think and relax a little bit. It gets me tired though. It makes me focus when I am doing my work afterwards. It makes me focus a lot easier. (Field note, June 2, 2010)

My field notes have showed that Kevin is caring, full of potential, and hard working. A conversation about exercising led into us talking about eating McDonald's, trans fat, and MSG. I shared with Kevin that I had recently read that MSG was poison and thought to contribute to lots of problems including learning disabilities. Kevin laughed and said, "Ha! That's probably why I am at RCHS!" I told him I did not think he needed to be at RCHS and that he had become apathetic. Kevin laughed, blushed, and agreed. I had interpreted his hard work and diligence in this way as I watched him complete work, excel at assignments, and volunteer answers during class discussions. My understandings of who he was and who he was becoming were formed by

his interactions with peers and teachers, and how he tried to negotiate with me during *Movement Matters*.

Kevin appeared to have conflicting stories and tensions about whether or not relationships played an important role in *Movement Matters*. Where Brandon was adamant that relationships were formed and deepened because of the program, Kevin could not say for sure. The first time I asked him if he thought relationships had anything to do with the program and if he had friends in the class on the equipment was he more or less likely to go on the equipment or did that affect him at all? He told me that it did not affect him. I asked about Mr. Wolfe as this was a relationship that affected Kevin's participation in the program. Kevin had shared very openly and strongly his dislike for Mr. Wolfe, so I asked him if that's why he didn't do the program when I was gone. He shared that was exactly why. I inquired if relationships could have something to do with *Movement Matters* and he said just with Mr. Wolfe and that he liked everyone else in his class. In our next meeting, I asked Kevin what his most and least favorite aspects of the program were and he told me that he felt good when he was on the treadmill and that there was a possibility that the program helped build relationships among students and between students and staff. "I especially like that I get to work out for free and be fit." When I asked him what his least favorite parts were, he told me, "nothing lately" (Field note, June 2010).

I reflected on my field notes and realized how my interpretations of Kevin were different from Brandon. From the first time I met Kevin, he would befriend the students who struggled socially and also get along well with popular students. He made an attempt to befriend Brandon in Grade 8 but a deep friendship never ensued. He was different from the rest of the class as well in that he didn't struggle with his academics.

Life experience is complex and contradictory, and narrative is well-suited to expressing that complexity and contradiction. If one is to consider a story to live by as stories one lives and tells, it is possible that contradictory plotlines arise within the story (Clandinin et al., 2006). “When these contradictory plotlines compete with one another tension becomes apparent, shaping awakenings that can lead to retellings and reliving of teachers’ stories to live by” (p.10). Although the authors were specifically talking about teachers, this idea can be applied to Kevin’s situation. He had come to a place of tension where his story to live by developed contradictory plotlines that awakened him to think about the role of relationships in *Movement Matters* as he struggled to make sense of the diverging stories he was living on and off the classroom landscape. His description of bringing part of who he was off the school landscape to who he was on the school landscape parallels Clandinin et al.’s (2006) idea of retelling and reliving his story to live by in order to move out of the place of tension in which he found himself uncomfortable with whom he was in the classroom.

Kevin said “I couldn’t do *Movement Matters* when you weren’t here. I hate Mr. Wolfe and didn’t want to be in the same room with him” (Field note, June 2010). This statement communicates much of the tension that led to Kevin’s retelling and reliving of his story to live by. Even though he felt better when he did the program, he could not bring himself to enter the Room 27 because of the tensions that emerged with the teacher. It was those same classroom doors he walked through in Grade 8 that led him on a positive path; one that improved his attendance, his fitness, his academics and ultimately, his self-confidence.

I learned that Kevin experienced teacher and school expectations as lower and student behaviour as poorer at RCHS than what he had experienced at his elementary school. From Kevin’s told stories as well as observing his hard work, diligence, and his ability to work and

stay focused; I came to see him as having a low self-esteem and not wanting to push himself. He knew the work was too easy and that he was capable of doing more academically but admitted he was 'used to RCHS' and apprehensive of change. I shared with him that I felt he did not need to be at RCHS and he should try Evergreen Collegiate.<sup>9</sup> When he agreed, I asked what was stopping him and he shared that he was scared of a new, bigger school with harder classes. He came to RCHS in grade 8 for behaviour reasons and was supposed to leave for grade 9-12 but admits he was comfortable and liked the easy work and that is why he never left. Although I never asked Kevin, and I wish I would have; I suspect that he has stayed in part because of the relationships that he has built with students and more specifically, with staff.

From the relational space that was emerging between Kevin and me, and my desires to know more about the experiences of a student who acknowledged that he 'did not belong' at his present high school, I probed into why he would not leave. Kevin is not the first student who has 'not belonged' at RCHS but stayed nonetheless. Kevin, and others, have felt they belonged at RCHS due to the relationships they had formed. When you consider the intimate class settings, youths seldom, if ever, feel threatened at RCHS.

I wanted to know if it was more than him being apathetic and I wanted to know why other youths have stayed. Was it because academic expectations are lower, because poorer behaviour is tolerated, because of the relationships that form with staff and youths, because of the small class sizes, and the opportunity to receive one-on-one, or all of the above? I tried to probe into Kevin's reasoning but he seemed embarrassed, maybe because I had figured him out, because he was modest, or because he did not know the answer. He is comfortable and feels safe, which is an important element of being a high school student. Kevin and I did not explore

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<sup>9</sup> Evergreen Collegiate is a unique community high school, with a mature setting, and where student population is diverse, drawn to the school for many reasons from all areas of the city. They offer the full range of regular, academic Grade 9 to 12 classes.



stories of who he was and who he is becoming other than the stories of him liking school at RCHS because he could still miss lots of school and catch up quickly and he liked working out as that had become an important aspect of his life.

During the timeframe of our interviews and the weeks following, Kevin started engaging in *Movement Matters* in the mornings while I was teaching. He would get on a treadmill just like he always had, but he opened up to me outside of class time as well. He would stop by to talk, to use my phone, to read books, and it was during these times that he opened up about personal issues and tensions in his own life.

### **Curriculum as Life Writing**

Kevin was also shaped by his school experiences as he struggled with who he was and who he is becoming. He struggled with personal issues and tried to figure out if he ‘belonged’ at RCHS. He had been told repeatedly in elementary school that he wasn’t smart enough and therefore, would fit in perfectly at RCHS (Field notes, June 2010). Just like Brandon’s story, a relationship existed between Kevin and each of the teachers as he crossed paths with them in his lived story of school, and these relationships each contributed to the shaping of that lived story. It was through years of living in relation to teachers and classmates within the dominant story of school that Kevin came to consider himself as a ‘stupid’ or ‘not smart enough’ to go to a ‘regular’ high school. I wanted Kevin to attend to the tension he experienced as I tried to show him that he was a capable and successful young man. I wanted him to see how the story of self as a failure in relation to school conflicted with the story of self he lived in my classroom. Kevin’s successes and confidence in my classroom, on the treadmill or doing academics, conflicted with who he explained to me that he was. When I confronted him about his high school placement at RCHS rather than Evergreen, he grinned, blushed, and shrugged. This made

me feel that perhaps Kevin was starting to feel that he was not so ‘stupid’ anymore and that he was capable of a ‘regular’ high school. These conflicting stories moved him to a place of liminality<sup>10</sup> (Heilbrun, 1999) where he was unsure of himself in a place between two stories of self. It was because of interruptions, the tensions created by these interruptions, and the places of liminality that existed as stories of self were interrupted that Kevin, Brandon, and I were all able to move from a place where we were unhappy or confused with our stories to new places as our stories were reshaped. Brandon openly shared that he ‘just decided to change because he knew he did not want to keep going in the direction he was, and that he was now happy.’ Kevin had difficulty articulating himself and needed probing in his realizations of how his story was reshaped; just as in our interviews. But his body language, constant smiles, and successfully completed assignments showed that he had moved from a place where he was unhappy with his story but now it had been reshaped. I was also experiencing conflicting stories that moved me to a place of liminality where I was unsure of the ultimate answers of my successes. This journey of research interrupted my story of getting students active to solve every teacher’s problem. In the process of reshaping my story, I discovered the impact of relationships and the hidden curriculum.

I learned from this experience alongside Brandon and Kevin that “...no one, no life, is completely knowable” (Pearce, 2004, p. 267). I think too often teachers are looked upon as people who are supposed to *know* their students. We are supposed to be able to report their abilities, their knowledge, and their difficulties down to a specific percentage grade on assignments, tests and report cards just as Brandon and Kevin experienced in their elementary schools. When I began the inquiry, Brandon was singled out as a student with the label of

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<sup>10</sup> Heilbrun describes a place of liminality as “a state of necessary in-betweenness” (Heilbrun, 1999, pg. 98), a “place where we write our own lines and eventually our own plays” (pp. 101-102).

‘pervasive developmental disorder’ and later as having an ‘acute personality failure disorder,’ which was a reason for his behavior deemed inappropriate year after year. After all, being diagnosed as having an ‘acute personality failure disorder’ was enough to explain why he would blurt out profanities all day long. If I understood Brandon to only be a student with a label, I would not have been able to understand him in all his complexities. I came to know him as a youth who loved sci-fi, loved to sew, loved reading, and loved conversing with staff. He was a son, a grandson, a cousin, and a friend. This inquiry, the time spent in a relationship with him, listening, observing, and attending to his story, helped me not to reduce him to the label he had been given and to delve deeper into the layers composing him: layers often shrouded by a label. Kevin also shared a label, although not one that was a formally diagnosed label. He was told repeatedly that he was not smart enough and began to believe that. Again, it was the inquiry and the time spent in a relationship with him, listening, observing, and attending to his story that helped me to dig deeper and realize that he was capable of attending a regular high school. He was a young man that had developed a habit of not fully engaging in his academics, and possibly was comfortable and safe at RCHS.

*Movement Matters* scaffolded curriculum and identity making through the relationships that were built as a result of the program. When I believed the program was the ultimate answer, I had not reflected on the impact of the relationships that were formed in Room 27. While the program was responsible for the changing of the brain chemistry, improved fitness levels, and increased self-esteem; it was not the sole reason for the successes in Room 27. I have set up *Movement Matters* programs nationally and while the majority have been successful, some have not. Reflecting back, the programs that have succeeded are the ones with caring, passionate, flexible teachers who encourage the youth, push them physically, and strive to build the

relationships. I did not realize how much relationships were a part of this curriculum. These relationships would not have occurred the same way without *Movement Matters*, so in a way, it was the ultimate answer. Although, I may not have planned for the potential social interactions that could occur as a result of the program, and I cannot make them happen, but I can provide opportunities and experiences that might foster these outcomes. Little did I know that this was becoming a huge part of the success of the program.

*Movement Matters* partially shaped possibilities for Brandon and Kevin's unfolding identity and, therefore, the life curriculum they could see for themselves. Engaging in narrative inquiry with Brandon and Kevin showed me that the stories each of them lived and told were not linear. Rather, I saw that who they are and who they are becoming was shaped by "stories inside stories and stories between stories" (Brody, Witherall, Donald & Lunblad, 1991, p. 257). As Brandon and Kevin's storytelling moved in multi-directions, it was made visible that the tellings of their lives were complex and fragmented. Brandon and Kevin showed me continuities and discontinuities between and among family and school stories. Laying their stories to live by alongside stories of my own experience also made visible continuities and discontinuities in my understandings of curriculum making. Awakening to these continuities and discontinuities deepened and shifted my understandings as a teacher and a researcher. I began to understand that relationships were a part of this curriculum and although I may not have planned them, providing the opportunities was in fact, curriculum making.

Eakin (1999) wrote about the extent to which we are relational selves living relational lives concluding that "all identity is relational" (p. 43). This aligns with Connelly and Clandinin's (1999) notion of communal creation and sustaining of stories to live by, as well as Dewey's (1938) principle of interaction. It is with these thoughts in mind that I consider the influence that

school has on the composition of the youth who enter our classroom, the shaping of their stories to live by. It is in relation to teachers, classmates, peers and curricula that youth shape and reshape their stories to live by.

Youth spend many hours with teachers and their classmates in school. Murphy (2004) wrote, “[o]ur stories to live by are shaped by the nested relationship we maintain in our lives” (p. 305). It is not difficult to imagine that teachers and classmates in classroom spaces influence the stories to live by of the youth who enter our high school classrooms. The bumping up of these stories are shaped by different stories and the relationships consequently developed among them. These stories are not always smooth and coherent as they are interrupted in moments of tension when bumping up occurs and youth encounter experiences in relation to others on the classroom landscape. It is with moments of tensions in mind I consider the way that the stories to live by in Room 27 were interrupted.

## Chapter 4: Conclusion

### Narrative Inquiry Wonders

#### **Curriculum: planned, enacted and experienced**

When traditional approaches to planned curriculum are implemented, the space for youth to shape and reshape their stories to live by are often diminished. When the classroom becomes a place where teachers transmit prescribed knowledge to a group of youth, the composition of their unique stories to live by may be disregarded. Aoki (2005) explained that a planned curriculum with no room for the lived curriculum of youth takes from the youth the power to shape and reshape their stories to live by. A greater emphasis must be placed on understanding the curriculum-as-lived (Clandinin et al., 2006) in relation to the planned curriculum. Youth construct knowledge according to past experience (Dewey, 1938; Oyler, 1996). Their current knowledge and stories will be unique because of experiences leading up to their present experiences, which requires attention be paid to their lived curriculum. “Teachers and students are co-actors as they dialectically shape the reality of classroom experience” (Aoki, 2005, p.4). Youth are entitled to this co-actor role from which they have traditionally been deprived. It is from within this co-acting role that youth gain the empowerment and the space to shape and reshape their stories.

The way that Brandon and Kevin experienced the daily curriculum through *Movement Matters* led them each on a journey. They experienced a shift; a new way to live their story. The boys had very different lived experiences at RCHS and in Room 27. Each of the youths felt safe and empowered enough to overtly shift his personal story, add new pages of identity to this chapter of school life, and explore new direction in their life and learning.

Both Brandon and Kevin increased their grades, which in turn increased their confidence. For Brandon, it also broke down the barriers and enabled relationship building and trust. For Kevin, it allowed him to realize that he was a capable student, one that was worthy of being in regular programs and schools. His improved attendance has allowed him to be successful academically, realize his full potential, and open his eyes to new opportunities. Both students have improved their body mass index and fitness levels; and have made physical activity and PE a priority in their lives. Both students participate in *Movement Matters* every other day and frequent the weight room to improve their strength. They are quick to advocate for the program when new students join their classes and are role models in Room 27.

Reflecting on the classroom landscape and inquiring into what Brandon and Kevin have shown me through their experiences, I realize how my thinking about a curriculum of lives has both deepened and widened. Before I saw youths' lives as shaped by family stories embedded within cultural, institutional and societal narratives. Now I see that the unfolding of a curriculum of lives (Clandinin et al., 2006) among youth, subject matter, teachers, and milieu can echo into and shape family stories as well as cultural, institutional, and societal narratives. The converse, how familial, cultural, institutional, and societal narratives also shape school stories. I see curriculum making as much more multi-layered in that while it is shaped in the meeting of a teacher's stories, youths' stories, subject matter stories, and school stories; each of these curriculum commonplaces is also shaping, and being shaped by, family, cultural, institutional, and societal landscapes; and conversely how they are shaping curriculum making.

*Movement Matters* grew from my observations and experiences as a teacher in a challenging learning environment. As a resource room teacher I felt special educators needed a more holistic pedagogy within our classroom and the program, or curriculum evolved from this

need. Observant teachers tend to the needs of all of their students. I observed many needs and I acted with intention to affect change and take care of my students and their learning. The curriculum evolved, grew, and changed over the three years since its inception. Convincing outcomes and indicators of success surfaced over time.

*Movement Matters* scaffolded curriculum and identity-making (Huber, Keats Whelan, & Clandinin, 2003) through the relationships that were built as a result of the program. While I believed the ‘program’ was the ultimate answer, I had not reflected on the impact of the relationships that were formed in Room 27 within the program. Teachers specialize in creating curricula and inviting students to experience curricula. In doing so, we respectfully respond to the unique needs of our students and applaud their experiences and growing identity through these experiences. It is interesting to note how much more responsive we, as teachers, need to be to this process. I realized through this journey that although I thought I had planned for a holistic approach to experiencing *Movement Matters*, I really did not attend to the social relationships developing within the program until the students began sharing their stories. These social relationships, vital to all of us who experienced the program are actually an enormous part of this program, or the enacted and experienced curriculum (Prosner, 1995). The experienced curriculum was not necessarily a part of my initial conscious design inside the program. The absence of officially planning for and recognizing the value of social relationships within *Movement Matters* by myself as the teacher caused me to wonder and question why these were so important. Through this wondering, my identity and understanding of teacher as planner and curriculum creator became more clear.



## Ever Evolving

I move both forward and backward all the while holding onto questions of who I am becoming as a special educator while facilitating the *Movement Matters* program. Traveling backward, I now situate my past experiences as a teacher in Schwab's (1962) four curriculum commonplaces—teacher, learner, subject matter, and milieu—in relation to my unfolding life curriculum as a special educator. Moving forward within each commonplace, I explore how my work as a teacher alongside my narrative inquiry with Brandon and Kevin, helps me imagine who I am becoming as a teacher. In this way, I am able to show, as Clandinin and Connelly (1992) described, that the four curriculum commonplaces "are in dynamic interaction" (p. 392). Attending to this dynamic interaction awakens me to thinking about many intersecting shifts of possibilities, shifts that draw me back to the earlier explored idea of liminality (Heilbrun, 1999), which is a process of negotiating life in the space between what was, what is, and what might become.

I carry strong memories of my own growing tensions as a teacher and I carry tensions and wonders about the complexity of my students' lives. I wonder what led me to view these students as being in need of fixing so badly and wonder if this is a tension because their upbringing is so different from my own? I wonder why the students were not engaged in the program anymore and why I decided to revisit my perception of my students?

While I was aware that not all youth had the same experiences growing up that I did, I was still naïve. Many of the youth I worked with have suffered a variety of forms of abuse, and while this is common in our city, this was not common in the community I grew up in; that I was aware of. I grew up in a small town where the sense of community was very strong and the majority of this community was 'white' and middle-class. Perhaps I was protected from these

stories as well as being naïve, but I had not been exposed to gangs and drugs like the majority of my students had been. For many of these youths, this is not a choice as they are inherited ways of being in the world from the people who helped form their identity.

Generalized anxiety, post-traumatic stress disorder, acquired brain injury, and fetal alcohol syndrome are prevalent at my school. I wonder if because of these labels, I thought I had to ‘fix’ all of my students? What is it about the treadmills and bikes in my classroom that I thought was going to ‘fix’ them? Was it because I was very active in my childhood and I equated activity with happiness? I know how I feel when I exercise and I know what the research says about it, so I wanted my students to experience it and from that, have more positive life experiences.

I know I saw changes in my classroom when I implemented the program but was it the changing brain chemistry, was it the relationships I was building with the students or that they were building with each other? Or, was it because I was a happier teacher because I had this equipment in my classroom and the equipment put me into my comfort zone? The first changes I noticed took place within weeks of starting the program. My initial observations led me to believe that getting students on bikes or treadmills was responsible for getting students to school on a regular basis and settling impulsive behaviors. I remember loving going to school every day to see what I would discover and I loved that I could get on a treadmill beside students and watch as their guards slowly lowered and non-threatening conversations emerged (Memory Reconstruction, March 2008).

### **Reflecting on Methodology**

Deciding on the methodology for this research was quite a journey. As I entered the

graduate program I had envisioned using the Kaufman<sup>11</sup> Assessment to provide statistics to ‘prove’ *Movement Matters* was improving students’ academics. As my journey continued, through classes and conversations, I experienced a shift in perspective terms of research. Through my experiences at the university, I came to realize that it was the experiences of the youths that I was working with that were at the root of my interest, with achievement being only part of the whole story. When I spoke of the successes of the program, I always spoke passionately about the behavioral changes and often did not mention the academic gains. In addition to the Kaufman quantitative results, I included journal entries, anecdotal records, interviews, and narrative inquiry. Narrative inquiry and the experiences of the two youth that I interviewed was the basis for chapter three. Chapter two focused on the creation of *Movement Matters* and the data and informal research prior to starting my thesis while weaving the narrative inquiry through the chapter. The data consisted of pre and post academic and fitness tests, observations, and anecdotal records kept by various staff members, and students’ journal entries.

The two youth were asked to be study participants because of the trust, respect, and communication we had for each other. They had been involved in *Movement Matters* since its inception and have had unique experiences and results in the program. Based on data that was collected outside of this thesis, the youth were chosen because of their diversity as students. Once the youths were selected to be study participants, they told me they were excited to talk about *Movement Matters* with me. They wanted to know why I picked them and I explained that it was because I felt we had good relationships and that their stories were worth telling (Memory Reconstruction, May, 2010).

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<sup>11</sup> The Kaufman Test of Educational Achievement, Brief Form, Second Edition is an individually administered measure of academic achievement for examinees aged 4½ through 90 that assesses the achievement domains of reading, mathematics and written language.

During the time I spent researching, I explored a few different types of field texts. I kept field notes throughout the inquiry for each interview. “These ongoing, daily notes, full of the details and moments of our inquiry lives in the field, are the text out of which we can tell stories of our story of experience” (Clandinin & Connelly, 2000, p. 104). Clandinin and Connelly (2000) mentioned the importance of being the recorder of events outside of the event, or as a character within the event. I used an audio-recorder for the interviews but these interviews quickly turned into conversations. As mentioned by Clandinin and Connelly (2000), “...conversations are marked by equality among participants and by flexibility to allow participants to establish forms and topics appropriate to their group inquiry” (p. 109). I appreciated this approach because it aligned with developing and maintaining trust and integrity with the individuals in the inquiry. I wanted the youth to see me as one who traveled on this journey along with them, and them with me. I wanted them to see me as one who respected their stories as individual and unique.

A negotiation of the time and place for communication was also necessary and this was collaborated with the youth. I did not want the conversation time to put the youth in a position of being behind in their work or missing something significant. I wanted to make sure that spending time in conversation with me was not deemed as something negative. They chose each time to meet during lunch either in my classroom or at a coffee shop one block from the school. I wanted to attend to the space commonplace in relation to these conversations. These places were familiar to the youth and provided a comfortable, familiar, quiet, and non-threatening environment for our conversations. Since I often ate my lunch in the classroom with students or would often take students to the coffee shop, it was not something out of the ordinary for them or me.

## **Physical Education and *Movement Matters* Beliefs and Challenges**

Many physical and psychological benefits of fitness for youths are obvious. No one disputes the positive effect that exercise can have on social skills and self-esteem. Optimal PE programs engage students on a daily basis cognitively, socially, and aerobically demanding physical activity and provide opportunities for physically strenuous play in order to inspire and instill lasting healthy behavioral patterns and lifetime skills. Unfortunately, the reality is that quality daily PE is becoming a thing of the past in many schools. *Movement Matters* can offer the physical, mental, emotional, and social benefits that many students are lacking. We need more research in order to assess the effects of such programs on the fitness, health, weight management, behaviors and academic performance of students over time. However, the results from this research as well as the previous three years of data and anecdotal records, provides a glimpse of some of the benefits and possibilities.

In addition to the research, my experience has shown that any new program or change can produce skepticism. In spite of the tremendous gains that students experienced within *Movement Matters* there were challenges. Along with my passion to increase my students' success through this program I also experienced the realities that come with trying to affect change. While many teachers and administrators were supportive, others were not. I remembered feeling lonely and uncomfortable at times. While CBC National News was visiting the school and compiling a 20-minute documentary on the success of *Movement Matters* that was aired nationally, other negative relationships continued to show themselves. I could hear staff whispering, "why do we need this?" (Memory reconstruction, January, 2007)

Parents who doubt the programs effectiveness have the right to remove their children from the program, but they should be reminded that it might take two to four weeks for

behavioral change to take place and a longer time for academic achievement to improve. Some administrative and teaching staff did express doubt about the effectiveness of *Movement Matters*. A few feared this program would add to the burdens of staff schedules, which proved false. Some feared that morning exercise programs might induce hyperactivity. On the contrary, overactive, lethargic and introverted students all benefited in a positive way while engaged in physical activity first thing in the day. Students calmed down quickly after their workout and engaged in the academic process more readily than if they had no physical activity.

*Movement Matters*—before, during, or after school—could assist at-risk students in controlling their behaviors in such a way as to meet the challenges inherent in being a student in a sedentary classroom. A common solution has been to provide remedial help in another sedentary setting. Intervention can be more effective if students have regular opportunities to benefit from exercise. When a child is hungry, we feed him. When the hunger is for exercise or play, we should be able to feed that, too.

Increasing student opportunities to exercise is good for the entire student population—as long as exercise is presented in a way that is not perceived as negative. A system-wide commitment to exercise is based on the belief that exercise can dovetail with student needs for mental well-being, and dovetail with mandated, special education accommodations (Wendt, 2000).

Providing *Movement Matters* for all students requires the investment of political, social, and financial capital from lawmakers, educators, parents, and students. If we do not act, the obesity epidemic will continue, helping to fuel the looming health-care crisis and lowering the quality of educational achievement of our children. If we do act now, we can help decrease the incidents of obesity, alleviate some of the pressure on our health-care system, and improve our

education system. Thus, *Movement Matters* and quality PE are essential to meeting goals worthy of our aspirations. There is abundant evidence that regular physical activity benefits the brains and bodies of school-aged children. Whether this evidence will lead to *Movement Matters* and quality PE in Canadian schools is more than an academic worry.

### **Exercise Rather Than Medications for Our Youth**

According to the U.S. National Institute of Health, in 2001 on any given day in North America, six to seven million of children are taking psychotropic drugs (LeFever, Arcona, & Antonuccio, 2003). And they're not doing it illegally, but by prescriptions. The geographical caveat is important as more kids in North America are diagnosed with ADD and given drugs like Ritalin to 'help' them behave than in the rest of the world combined. In fact (Shaywitz, 1999), the US and Canada account for a startling 95 percent of worldwide Ritalin consumption. Medication is meeting a neurological need for these children, but new research is finding that the long-term effects of medications on the brain can be as serious as some of the illegal drugs campaigned against in drug prevention programs. Medical and educational establishments are conducting a skyrocketing campaign to get kids, and their parents, to 'just say yes' to brain-altering pharmaceuticals, with the drug of choice being Ritalin. In 1970, when approximately 150,000 students were on Ritalin, America was alarmed enough to get the Drug Enforcement Agency to classify Ritalin and other amphetamine-type drugs as Class II substances, a category that includes cocaine and one that indicates significant risk of abuse. Despite this apparent safeguard, the number of children taking psychiatric stimulants today has risen over 40-fold (LeFever, Arcona, & Antonuccio, 2003).

The downside of this scenario is found in the fact that we never really answer the million-dollar question. Why can't Johnny sit still? The answer is rather simple. He cannot sit still

because a healthy and growing brain needs to have the body in motion. When the body begins to move the heart begins to pump. The heart is responsible for pumping nutrient-rich blood throughout the brain. In order for our brains to grow, adequate volumes of blood must be pumped throughout our neurological structures, feeding cells so that our neurological connections can increase in density (Ratey, 2008). With our children leading increasingly sedentary lifestyles, children instinctively look for ways to become active. The sad reality is our common practice of assigning time-outs to students may actually contribute to the child's deteriorating behavior. In reality we should be assigning these active students to a time-in.

Psychologist Daniel Elkind, in his 1981 classic, *The Hurried Child*, discussed the increasing “industrialization” of our schools, with their regimented schedules, even at the elementary level, and their focus on turning out quality-controlled products, i.e., students. With administrators facing increasing pressures to have their students perform well on standardized tests, and with more troubled children in the schools, the atmosphere is tense at best. The unfortunate reality is that schools have an interest in keeping order, in keeping children quiet and calm so they can get on with the business of teaching and learning subjects such as math and ELA, and psychiatric medicines do help keep schoolchildren under control. Elkind writes, in the words of developmental pediatrician Dr. Joseph Keeley, “We sometimes use medications to make kids fit into schools rather than schools to fit the kids” (xxv).

Of course there are better ways to make schools work, such as appropriate therapy for troubled youngsters, personal program plans, smaller classes that enable relationship building, and increased physical activity. But these approaches are more difficult—and more expensive. Thus, school districts may have a vested interest in medication as a quick, less costly, fix, although this may not be what is best for a particular child. Dr. David Stein (1999) stated, “The



drugs blunt their behavior. They don't act out in class, and they sit there quietly...the difficulty is that children learn nothing from a drug" (p.3).

Schools justify the need for medications (LeFever, Arcona, & Antonuccio, 2003) by saying that children on Ritalin learn better because the drug allows them to focus, but that claim has never been proven. A quiet student is not necessarily a focused child. According to Stein (1999), so-called ADD children can learn when they want to; it is just that schools expect too much of students and do not engage them:

This country has started teaching second and third-grade material in kindergarten, and children begin to get burnt out by the time they're in the second grade. They wind up hating schoolwork. And that's the key. These children can play very complex video games, and they can read the instructions, because they enjoy doing it. (p. 3)

Children manifest behavioral disorders for a number of reasons, including physical ones such as dietary factors and lack of exercise. Doctors taking a proactive approach believe that children can and should be helped without drugs, as drugs only mask the problem without getting to the root of it. Moreover, drugs do not teach a child anything. The advantage of a drug-free approach is that children can learn how to actively think and how to monitor their behavior. Improvements are long-term, with no reliance on dangerous substances (Zernike & Peterson, 2001).

Psychologist Dr. Thomas Armstrong is a former special education teacher who has had a lot of experience working with children with attention and behavior problems. In his book, *The Myth of the A.D.D. Child*, Armstrong (1995) describes 50 techniques that parents and teachers can use to mold the behavior of children who are habitually inattentive or hyperactive. His suggested strategies range from dietary and physical techniques to new ways of communicating

with your child and interacting as a family. So, instead of ‘using medications to make kids fit into schools rather than schools to fit the kids,’ I decided to create *Movement Matters* which would be a better way to make schools work such as, although more difficult and expensive, smaller classes that enable relationship building, and increased physical activity. This increased physical activity helped to make Brandon and Kevin fit into RCHS and RCHS fit Brandon and Kevin.

### **Final Wonders**

My journey alongside Brandon and Kevin became an experience that I could not have projected, predicted, or planned for. I began the journey, as the researcher, and attempted to capture their experiences. I sit here now in a state of reflective awe as I try to put into words the complexity of the time, space, and relationships that I experienced. I started this thesis with stories of how I believed *Movement Matters* was the ‘ultimate answer’ to not only my successes as a teacher but to my students’ successes. After embarking on this inquiry, this journey alongside Brandon and Kevin, I see the experiences I had in a different way, layered much deeper than the memories I chose to retell. Now I see that “...memory is a narrative reconstruction of events” (Lyle, 2000, p.52) in which I had attempted to create a smooth and coherent story of success and achievement within the context of school. I acknowledged places of tension along the journey, namely with relationships, achievement, and insecurities – both my students and mine.

Our society is changing and many youth need our help. I wonder what role schools need to play in changing our society? Is it implementing more PE and physical activity? Or, is it focusing on relationship building amongst students and staff? Is it a combination of physical activity and a warm welcoming inviting classroom that promotes relationship building? I wonder

what exactly is the magic potion? Regardless, many of our youth need our help and I think an old African proverb that says, “It takes a village to raise a child” (Brainy Quote, n.d.) but in this case, that proverb needs to be modified to, “It takes a village to raise a healthy child.” Everyone has a role to play.

*Movement Matters* may not be a panacea to solve all of education's problems. But the discussion of how to improve student learning must widen from axons and dendrites to the bigger picture. That bigger picture is that our brain is involved with everything we do at school. The brain is the most relevant feature to explore, because it affects every strategy, action, behavior, and relationship we engage in. We need to have a more holistic approach (Infed, n.d.) that is based on the premise that each person finds identity, meaning, and purpose in life through connections to the community, to the natural world, and to humanitarian values such as compassion and peace. In considering curriculum using a holistic approach, one must address the question of what children and youth need to learn. Since holistic education seeks to educate the whole person, there are key factors that are essential to this type of education such as, children needing to learn about themselves. This involves learning self-respect and self esteem. Children also need to learn about relationships. In learning about their relationships with others, there is a focus on social “literacy” (learning to see social influence) and emotional “literacy” (one’s own self in relation to others). Children also need to learn about resilience. This entails overcoming difficulties, facing challenges and learning how to ensure long-term success (K12 Academics, n.d.). For Brandon and Kevin, the holistic approach was that of *Movement Matters*. It was through *Movement Matters* that Brandon and Kevin were able to experience a shift; a new way to live their story.

Who I am becoming as a teacher continues to evolve as I find new puzzle pieces and

discover emerging possibilities. Developing strong relationships with youth, families and graduate school peers and professors have been central in my shifting practices as a teacher. Coming to know youth in their multiplicity as well as tensions they have experienced within schools, has continuously shifted how I think about, plan for, engage in, and assess curriculum making in *Movement Matters*. It is important to remember that the whole student challenges us as educators to feed the student's mind, body and social constructs.

*Movement Matters* educated Brandon and Kevin by exploring as many avenues as possible to enhance their knowledge, health, and well-being including the physical, intellectual, spiritual, and the social/emotional. The boys have forever changed and now, eight months since the last interview, we are back in a position of partners; we all still take pride in what we do in Room 27. The boys are more determined than ever to ensure their heart rates are where they need to be, they continue to push themselves, and they advocate for the program. They believe in what it has done for them. Brandon knows first hand that it can reduce incidents of obesity, as he is now in a healthy target weight zone and we know this will alleviate some of the pressure on our health-care system. Both Brandon and Kevin share that *Movement Matters* will improve our educational system. As Brandon mentioned in his interview, "this isn't rocket science, why isn't everyone in this city, no wait, in the world, doing this program. It really works!" (Field note, May 2010)

I am reminded through my journey that I have learned a great deal and I still have much to learn. The 'Crow and Weasel' story, (Lopez & Pohrt. 1991) speaks of the wonder of stories and the great need to pay attention to their value. Crow and Weasel is a mythical story about two adventurers who traveled far from their village, encountered strange places and people, and gained important knowledge from animal allies. They returned to tell the stories of their

adventures and the many lessons learned about friendship, respect for others, the importance of gratitude, and the sacredness of relationships:

I would ask you to remember only this one thing,” said Badger.

The stories people tell have a way of taking care of them. If stories come to you, care for them. And learn to give them away where they are needed. Sometimes a person needs a story more than food to stay alive. That is why we put stories in each other’s memory. This is how people care for themselves. One day you will be good storytellers. Never forget these obligations. (p.60)

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