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Moving Forward with Purpose: Increasing Physical Activity for School Wellness

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Moving Forward with Purpose: Increasing Physical Activity for School Wellness

Abstract

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Keywords

positive psychology, positive education, physical activity, physical literacy, physical education, movement, positive emotions, teacher burnout, positive interventions

Disciplines

Elementary Education | Health and Physical Education | Teacher Education and Professional Development

**Moving Forward with Purpose:
Increasing Physical Activity for School Wellness**

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Master of Applied Positive Psychology Program, University of Pennsylvania

MAPP 800: Capstone Project

Advisor: Amy Rosenthal

August 1, 2021

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This year of 2020-2021, while challenging, was a year of tremendous growth. As I reflect on all I've learned, I'm humbled by all the hope it has given me.

Preface

When I was a teacher, I created this simple daily routine of encouraging students to use the ten minutes passing period between classes to take a run around the play yard. We called it “moving forward with purpose.” The students would leave class, drop their books on the lunch tables and start running around the black top. The school bell would ring at the ten-minute mark. Some challenged themselves to run a mile, some walked, but the point was, they all moved until it was time to reenter the classroom.

Other teachers commented on the fact that they thought I was giving the kids an extra recess, but I knew something else was going on. My students would come into my class a little bit sweaty and much more energized. They stopped for a drink of water and settled into their desks ready to work. My comment to them was, “we run, because if I give you ten, you’ll give me 30,” referring to the number of focused minutes on academics that I believe resulted from their physical activity.

I never thought about the future impact of this practice until recently when I received a call out of the blue. I didn’t completely recognize the voice until she identified herself. Her child, Michelle, had been in my sixth-grade class ten years before.

“Hi Mrs. Bailey, I felt compelled to share a comment Michelle made in a call from college today. When I asked her about an upcoming test, she told me that she was heading out on a pretest “Bailey Run”.

When teaching I had made it a habit to take the kids out on a run as a stress reliever before tests. Michelle apparently continues to take these runs into her college career. With this call, I recognized the profound impact physical activity had on my students.

I knew intuitively that by taking time throughout the day for intentional spurts of physical activity, students were more prepared for learning. Little did I know that science supports what I knew in my gut. Cultivating health and awareness of the importance of physical activity in childhood creates opportunities for well-being and academic success which can follow my students into adulthood. Just like it had for Michelle.

Introduction

The focus of this capstone is the positive impact of embedded physical activities on elementary school education. Movement used during the teaching day enhances learning, enables cognitive skills, and increases wellness for both students and teachers (Bunketorp et al., 2015; Deuster & Silverman, 2013). Physical activity (PA) or movement benefits both mental and physical health (Bunketorp et al., 2015; Slater et al., 2012). Educating the whole child should be the goal of education; what physical activity does for the body, it also does for the mind (Ratey, 2008).

If teachers understand the natural rewards for utilizing PA to enhance learning for both themselves and their students and integrate movement into their educational practices, school wellness could be increased. By creating an intentional daily habit of moving, teachers can not only help students become more active and physically healthier but increase their capacity to learn. This practice also improves the opportunities for their health and wellness into adulthood (Hallal et al., 2006).

When teaching I use the room as a stage, role modeling extra physicality while energetically moving around the classroom. I teach from every section of the room and move between desks. I sit, I stand, and sometimes I jog in place. Because teachers are the key to

increasing student physical activity throughout the day, creating an environment of energy and enthusiasm is important (Delk et al., 2014). Physical activity increases learning, improves classroom behaviors, and enhances effectiveness of the curriculum (Patrick et al., 2000). Our bodies can be a mechanism to engage our minds (Ratey, 2008)

This paper will look at the important role physical activity plays in the overall physical, emotional, and academic well-being of students and make an argument for why the field of positive education should incorporate physical activity into its framework. It will also make a case for the critical role teachers play in bringing physical activity into their classrooms and provide strategies for how teachers can do this in a more organic way.

Schools using intentional physical activity practices are places alive with energy, motivation, and potential wellness, and an environment in which children deserve to be educated. Physical activity has impacted my teaching in every elementary school classroom in which I have been privileged to teach. By encouraging children to explore learning through body movement, sparking energy with vigorous physical activity, and allowing movement to combat sedentary behaviors, I believe my students have thrived.

The State of Movement in Schools

In most school settings where I have taught, the students are on campus for approximately seven hours each day. During these seven hours, twenty minutes are spent in morning recess and there is a forty-minute lunch break at noon. This leaves six hours which are usually spent in a classroom setting. For most children the amount of uninterrupted sedentary time is greater in a school environment than at home (Abbott et al., 2013).

There are generally three times during a seven-hour school day when physical activity is offered: physical education classes (PE), recess time, and teacher offered physical activity breaks (Slater et al., 2012). According to the California Department of Education (2005), schools are required to provide 200 minutes of physical education per every ten days of school. This translates to approximately two 50 minutes classes of physical education per week.

PE, not considered an academic course, is not mandatory in many states and is regularly cut from the school schedule when time and budgets are constrained (Slater et al., 2012). The increased pressure to achieve higher academic test scores impacts the amount of PE minutes allowed. This fact translates into increased academic time at the expense of physical activity minutes offered to children throughout the school day.

This greater focus on academics has resulted not only in the loss or reduction of PE classes but in the loss of recess minutes as well (Bunketorp et al., 2015; Singh et al., 2012). In my experience with elementary schools, children get a twenty-minute morning recess, of which 10 minutes is spent lining up and walking out to the play yard. During a forty-minute lunch break, students are expected to spend at least 15 minutes of that time eating, unless they are waiting in a long lunch line which means they get even less time to play.

The latest global guidelines as set by the World Health Organization have changed the recommended amount of physical activity for children each day from a *minimum* of sixty minutes of moderate to vigorous intensity physical activity (MVPA) to an *average* of 60 minutes per day (Bull et al., 2020). This increase is not reflected in the current practices of including physical activity during school hours in the United States (Robertson-Wilson et al., 2012). With PE class happening only twice a week, and a shift towards shorter periods of recess time, schools are failing to provide enough opportunities for physical activity for students during the school

day. Considering the number of hours children spend in school, we can find time to offer at least sixty minutes of PA daily even if it is not a formal PE class. It is a school's responsibility and by extension within the power of teachers to make this happen. There is a case to be made for increasing and embedding PA into the student's day to increase student health, academic performance, and overall wellness. More scientific studies need to corroborate the idea that PA increases academic results.

Justifying a reduction in the amount of physical activity at school by arguing that children can get their exercise at home is not supported by the science. Studies show that inactivity during the school day does not motivate students to increase their activity at home (Dale et al., 2000). Due to sedentary lifestyles, the study found that exposure to more active life choices through education and participation would combat the trend of diminishing activity as children age. This supports a case for increasing the amount of physical activity to which a child is afforded at school.

In the past the incentive to increase physical activity was to combat obesity and other physical health issues (Kibbe et al., 2011). But current studies show that getting children out of their desks and moving not only prevents obesity, but it also has positive mental, academic, and emotional outcomes for every child (Delk et al., 2014; Hallal et al., 2006; Bunketorp et al., 2015; Bull et al., 2020; Slater et al., 2012).

There are of course barriers to increasing physical activity in schools. One is the attitude that physical education is not an academic course and therefore not as important to a child's development as math and reading (Coe et al., 2006). A lack of awareness by teachers about the positive effect that physical activity has on the learning centers of the brain is another (Ratey, 2008).

A third barrier is the lack of rigor in most PE classes. In a study conducted by Coe et al. (2006), where traditional PE classes were evaluated by means of a test called the System for Observing Fitness Instruction Time (SOFIT), researchers found that in most 55-minute PE classes, students experience moderate to vigorous activity levels on an average of only 19 minutes per class. This is well below the threshold for physical activity minutes that enhance health and wellness. The impression that we are satisfying fitness needs through PE class alone is misguided.

There is a move in education to educate the whole child. Despite this, the balance remains skewed towards academics, leaving the social, emotional and health competencies to be addressed as occasional classes when time allows (Cohen, 2006). Developing a child's holistic strengths and their social and emotional learning (SEL), is what the positive education movement addresses and will be discussed more in detail, especially as this movement begins to recognize the importance of physical health in the education of the whole child (Norrish & Seligman, 2015).

Physical Literacy Increases Well-being

When you think of reading literacy, confidence in the written word comes to mind. The term physical literacy is similar. Physical literacy is the ability to move with expected confidence (Whitehead, 2013). As humans we are naturally capable of movement unless we have a physical disability. Developing physicality is a process, a journey of discovering how we move within the different environments in which we traverse. Physical literacy is a learned process from a child's first step to the more fundamental movement skills of running, jumping and throwing (Lubans et

al., 2010). Encouraging and developing physical literacy is important for the physical and mental wellness of children.

Margaret Whitehead (2013), the author of the first book exploring the concept of physical literacy, describes it as moving with confidence through various environments. She submits that physical literacy is more than foundational movement skills; it is developing the ability to move, react and function through life. Whitehead's research emphasizes that movement is an individualized journey, and she hypothesizes that attaining physical literacy early on in life is crucial for reaching our full physical potential, regardless of born ability. When children can learn, experience, and gain confidence in their physical abilities then flourishing is possible (Whitehead, 2013). I've witnessed children become more confident in their physical awareness using bursts of physical activity offered throughout the day. These students accept challenges more readily and get less discouraged when making a mistake.

Skills taught to increase physical literacy are the foundation for all physical activity. Basic skills like running and jumping, throwing and catching, and balancing enable children to gain confidence in movement and increase their potential health benefits (Lubans et al., 2010). As with reading literacy or foreign language acquisition, there may be a natural window of opportunity which can close before full literacy or confidence in the skill is reached. That is why a focus on physical literacy is important especially during childhood (Whitehead, 2013). Allowing consistent daily opportunities to practice movement, much as we practice reading and math in school, will increase physical competencies.

When children can practice and improve their physical literacy, their well-being improves. According to Schaerz et al. (2020) physical literacy depends on a child's disposition (are they motivated to move or not), access to resources (do they have opportunities to move or

not) and physical demands. The study, though limited to boys, indicated that support in these three areas increases physical literacy. The disposition of the child or their strengths notes a correlation between motivation and competence. The group self-reported that when they were motivated by physical activity, their competence increased and vice versa. When the students felt improvement, they were motivated to participate, practice, and improve. When family or friends were “co-active” and the activity had a frequency and duration that allowed familiarity, then the children’s enjoyment increased (Schaerz et al., 2020). Finally, there may be inherent limitations to the physical traits we are born with, however early action can develop physical literacy through coaching and support, and through creating an environment for improvement (Schaerz et al., 2020).

Historically physical literacy and human flourishing share a lineage of monism, the idea that the body and mind are not separate but entwined (Durdin-Myers & Whitehead, 2019). Traditionally school is focused on academics. The positive education movement recognizes the need for mental and physical health in addition to mastering of academic skills (Norrish et al., 2013). Physical literacy makes its case by connecting body and mind to develop a more complete person, a more well rounded student. One of the foundations for flourishing is the idea of health including both mental and physical well-being (Durdin-Myers & Whitehead, 2019). Providing an environment where children can develop their physical literacy will increase their opportunities to flourish.

Through awareness and understanding of their bodies and their ability to move, children can develop the agency to understand the control they have over their whole self. If we could encourage ownership of mind and body, including the importance of movement, then students

might begin to take better care of themselves as they pass through adolescence and into adulthood.

Valuing the development of physical literacy in elementary school can lead to internalizing personal behaviors that maintain both physical and mental health. As Durden-Myers & Whitehead (2019) propose, each child can learn to self-direct their behaviors to increase their path to flourishing. I believe it is never too early to learn self-responsibility in taking care of ourselves.

Physical literacy helps develop many of the foundational attributes that positive psychology focuses on such as agency, self-acceptance, interpersonal skills, optimism, and vitality (Durden-Myers & Whitehead, 2019) - concepts that will be explained in depth later in this paper. When exploring physical literacy with students, all these attributes can be realized. And with these attributes of physical literacy comes flourishing.

Physical Activity and the Brain

Ask any elementary student what their favorite subject is and most likely they will say recess. Why do you think that is? It's because recess is twenty minutes of self-directed uninhibited play and on some level, children must know it is good for them. Exercise engages not only the body, but physical activity also enhances the mind (Ratey, 2008).

Physical activity improves pathways to learning in the brain, leading to improved brain function and improved academic performance (Ploughman, 2008; Ratey, 2008). In the book *Spark*, by Dr. John Ratey (2008), the Naperville, Illinois, school district's program is offered as an example of how incorporating movement into the school day can impact academic results. By revamping the traditional PE classes away from skill building and sports to individualized plans

to encourage students to focus on their own markers of blood pressure, heart rate, body fat and enjoyment, the overall fitness of the student body improved within years as did their test performances (Ratey, 2008).

Exercise induces change to the brain and builds plasticity, which is the ability to rewire and remodel the brain (Ratey, 2008). Physical activity increases the growth of neurons that create changes in the brain that boost learning and memory. Running on a wheel enabled rodents to improve in both gaining and retaining learned behaviors (Cotman, 2007). Cotman (2007) was curious about a neurotrophic factor known as Brain-Derived Neurotrophic Factor (BDNF), which builds circuitry in the brain, and its relationship to exercise. By injecting the exercising mice with a compound that is attached to the BDNF, Cotman witnessed their hippocampus light up. By tying BDNF to the learning center of the brain, his study made the connection between physical activity and cognitive abilities (Ratey, 2008). As Ratey claims, exercise is like “Miracle-Gro for the brain,” alluding to the fertilizer that enables plant growth.

Bouts of physical activity in Naperville are also what Ratey (2008) credits as an “example that offers real hope” in successful intervention for health (p. 8). The Naperville experiment started as a desire to spark a change in an ineffective physical education program. According to Ratey (2008), Naperville has developed into a learning lab of innovation to improve wellness at schools. By shifting from teaching sports to emphasizing fitness, an impact was made on both students’ fitness and academics. By designing a curriculum that individualizes physical fitness activities, the program shows success in both beating the national norm in fitness well-being, but also increased academic achievement (Ratey, 2008).

As a result, Naperville is the success story that other schools study (Ratey, 2008). In comparisons to worldwide scores in math and science, the Naperville schools place in the top

tier. This significant correlation between Naperville's innovative physical education program and improved test scores is validated by the introduction of a daily practice of physical education class in another school in Titusville, Pennsylvania. Increasing PE enabled an increase in student testing from below state average to 17% above for both reading and math (Sattelmair & Ratey, 2009). As Ratey (2008) states, Naperville is "a powerful case study on how aerobic activity can transform not only the body but also the mind," (p. 19).

Physical Activity and Academic Performance

Studies like the Naperville case mentioned above continue to show a correlation between physical activity and increased academic performance in school children (Kibbe et al., 2011), and yet physical education is still considered a class that can be eliminated most easily from the school's daily schedule. The data indicates that PA will not impede academic performance by taking minutes away from academic subjects (Trudeau & Shepard, 2008). To the contrary the conclusion drawn by these studies is that academic performance may be enhanced by physical activity in the classroom.

A literature review conducted by Singh et al. (2012), found that although physical activity was used to increase and protect health in students, intentional and consistent use of physical activity led towards a possible increase in cognition and academic performance. Although the studies at this time remain inconclusive, there is a strong consensus that there is a relationship between PA and academic performance (Singh et al., 2012). This is a result of understanding that exercise increases the flow of oxygen and blood to the brain, and it increases the number of neurotransmitters such as endorphins which elevate mood and relieve stress. This process increases the plasticity that enables the brain to generate new brain growth (Taras, 2005;

Singh et al., 2012). All these effects lead to better concentration and performance in the classroom, both signs of increased cognitive skills (Singh et al., 2012).

Cognitive outcomes such as increased concentration and on-task behavior increases with physical activity. While many of the studies are limited due to disparities in interventions and outcomes assessed, most of the research conclusions suggest that academic performance is not hindered by physical activity and suggest it may be enhanced by these cognitive improvements (Watson et al., 2017; Trudeau & Shepard, 2008).

Referencing Ratey's work, Russell Atkinson (2015) suggests that the evidence is growing that physical activity enhances brain function in children. His article on play and cognition posits that it may be the complexity of the physical activity or physical education that possibly increases academic achievement in children. Using physical activity to engage children during the school day will improve that experience and as a result increase their level of academic performance.

School Programs: Studies on Physical Activity in the Classroom

The need for increasing physical activity into the daily routine of an elementary school is important for both teacher and student well-being. An intervention has a better chance at success if it includes these four stages: dissemination, adoption, implementation, and institutionalization (Kelder et al., 2003). To create interest while introducing an intervention, it must be clearly disseminated or explained to whoever the program will affect. For instance, it's not enough for an administrator to implement a program, teachers, students, and their parents need to understand the motivation and thought behind the intervention. Explicitly citing the reasons and goals of a program leads to adopting the plan and leads to positive implementation. Finally, when a plan

has been thoughtfully implemented with organized steps and procedures then it has the potential to become institutionalized, and part of the culture of the school. A program's success replicates when evaluated and reinstated over ensuing years.

Two longitudinal studies stand out as examples for how this process looks in a school. In early 1991, the Child and Adolescent Trial for Cardiovascular Health program (CATCH) sought to improve physical fitness at elementary schools. At the time, a shortage of physical education specialists in elementary schools was identified so it was determined that classroom teachers would need to be trained in best physical education (PE) practices.

Over five years and with a goal of increasing minutes of MVPA (moderate to vigorous physical activity) during their PE classes, CATCH was rolled out in 96 elementary schools through four regions in the United States. A randomized controlled study, reviewing the implementation of CATCH, became part of the five-year longitudinal study (Kelder et al., 2003). The goal of the program was to increase to 40% the minutes of MVPA during PE class. Through CATCH PE, a toolbox of activities and teacher training was offered to help incorporate more MVPA minutes into PE class. The games and activities all focused on movements that could be incorporated into normal daily activity for the students.

With the continued levels of obesity and mental health issues increasing in our youth population, the standard minutes of MVPA is still too low (Kelder et al., 2003). It's well under the 60 minutes a day minimum that is recommended for children's overall health. In the beginning CATCH did show that through teacher training, the use of physical activity during the day increased (Kelder et al., 2003).

The CATCH program provided teachers with tools for using physical activity in their classroom and not just during PE class. Understanding what short breaks of intentional activity

does to energize students, shows that this intervention can improve later time-on-task focus and student concentration on academics (Delk et al., 2014).

Another study focused on various conditions in a 3-year study at thirty middle schools in Texas. The intervention, based on the CATCH model, included research which supports the premise that physical activity breaks increase academic performance (Delk et al., 2014).

The Texas study sample was broken into three groups each receiving a version of CATCH. The first group, described as *Basic*, included a professional development program for teachers, which included a minimum packet of materials which had to be shared among teacher participants, and the option for teachers to have flexibility in whether they want to use the program in their class or not. The two other groups, *Basic Plus* and *Basic Plus SM* included the same initial professional training but with added once a month follow ups from a specialized facilitator from CATCH. This included monthly coaching sessions, easier access to materials and emails to remind and check teacher progress. The *Basic Plus SM* program also included a social outreach component to encourage ideas for students' use of daily PA outside of school.

The study concluded that extra and continued professional development for the teachers increased the use of the program and as a result improved the results of the intervention (Delk et al., 2014). Teachers from the more enhanced programs showed high scores of self-efficacy in carrying out their PA in the classroom, due in part to increased education regarding the intervention's benefits for their students (Delk et al., 2014).

This study reinforces the idea that teachers are receptive to the use of physical activity in their classroom but need support through professional development. Administration support and knowledge about the educational benefits of PA makes the intervention's implementation more

meaningful. The study shows that although activity bursts in the classroom will add PA minutes, teachers need education and support to implement the program (Delk et al., 2014).

The intention of CATCH was to increase MVPA during PE class, however, through the programs' assessment two strong obstacles to the program's success emerged. The first was a decline in teacher training and the second was the decreased number of minutes scheduled for physical activity during the school day due to academic demands (Sallis et al., 1996). Both factors reconfirm my thoughts that teacher participation and increased pressure on academic performance impact physical activity minutes in elementary schools. In addition, due to the timing of the studies, the benefit of increased academic performance was not yet considered.

Another program that highlights the importance of physical activity to increase student wellness in elementary schools is the TAKE 10! program. This physical activity intervention, reviewed after a ten-year period by Kibbe et al. (2011), concluded that increasing the use of movement in the elementary school classroom enhances academics, physical health, and overall wellness for students. TAKE 10! was a result of an intervention to combat the obesity problem identified by the Physical Activity and Nutrition (PAN) Program of the International Life Sciences Institute (ILSI) Research Foundation (Kibbe et al., 2011).

Concern with the declining numbers of minutes devoted to physical activity in elementary schools, this intervention was developed to introduce 10-minute activity bursts in the classroom throughout the day. The focus of Take10! was to combine physical activity with acquiring academic skills. For example, Take 10! included grade specific materials divided by academic subjects, like teaching children multiplication facts while skipping rope.

In a summary of studies by Kibbe et al. (2011), results from the intervention describe significant impact on reducing student off-task behaviors, increasing student concentration, and

improving reading and math skills. An added bonus was the much-needed increase in daily physical activity minutes. The article concluded that significantly increasing classroom physical activity is feasible and effective in increasing wellness factors including academics. Studies on TAKE 10! programs implemented internationally showed potential replicability for other school environments (Kibbe et al., 2011).

The study also indicated that barriers remain on how schools can independently sustain these interventions. To retain these positive interventions, Kelder et al. (2003) suggest that programs need to become institutionalized or part of the expected school culture. Teacher education, administration support and student enthusiasm go far to make the use of physical activity a legitimate and effective intervention for both health and well-being. Science defends the practice of using physical activity as an effective tool for significantly improving the physical and mental needs of children (Kibbe et al., 2011; Fox, 1999).

I believe a necessary step is gaining public support for physical activity because it is as significant as academics to our students' well-being. When we have buy-in from all, including teachers, a practice of including physical activity into our daily schedule will produce benefits for wellness at school and beyond.

Physical Activity and the Teacher

Physical activity is a positive intervention that can increase teacher health in addition to the students. Teachers' buy-in for personal health will add to the importance of physical activity as a positive life skill (Vina et al., 2012). Exercise and healthful practices positively impact our heart and blood pressure and strengthens the immune system (Vina et al., 2012). With routine exercise, we can keep our stress in check, and it enables better sleeping habits - resulting in

improved health. As a teacher's daily routine is anything but predictable, maintaining physical health is of utmost importance. How do we make that happen?

Because of the influence teachers have on their students, a need to reflect upon their own relationship with physical activity and movement is imperative. Reflecting on their relationship to movement, how they move and what they enjoy about moving, creates an appreciation for this practice and its benefits. When teachers come to appreciate the physical, mental, and social outcomes physical activity creates, they will then see it as a crucial ingredient in creating positive education for children. It starts with them.

The first step is a thorough investigation by the teacher of their own relationship with physical activity. I'm not talking about exercise programs or scheduled runs, but an internal audit of what moving their body means to them and identifying ways that they already incorporate movement into their lives. Asking if they like to garden or cook, enjoy cleaning their home or riding a bike or even if they prefer to take the stairs? Physical activity can take many forms. Positive interventions focused on fitting the individual are important to their success (Preillitensky, 2016). A mind shift in thinking about what movement they already engage in and experiencing its positive outcomes will lead a teacher towards creating these positive interventions for their students.

In a study by Crum and Langer (2007) entitled, *Exercise and the Placebo Effect*, the researchers studied two groups of housekeepers during work hours. One group was told that their work would contribute to the minutes of exercise recommended by the Surgeon General as being adequate for their activity level. The control group, on the other hand, was not given this information. Both groups continued their work with no alterations to their activity levels.

The group who perceived that they were getting exercise during their work posted improvement in overall health markers of blood pressure, lowered body fat scores and decreased weight in the month-long intervention. The outcomes were not the same for the control group who were not aware that their work could be considered viable exercise. The control group did not report the same increased health benefits that the informed group realized. It was discussed by the study that mind-set matters in perceived exercise performance. Those who believed their work benefitted them actually increased their health benefits.

This study shows that an awareness of existing movement practices and a growth mindset about their benefits can increase behaviors and result in physical outcomes that contribute to physical health. Because they began to believe that they were getting more exercise by just engaging in their everyday activities they began to feel the benefits. Teachers can be similarly impacted.

I contend that if teachers could track and become aware of the movement, they are already engaging in during their teaching day, they could see physical activity less as something to add and more as something to add to. Providing a Fitbit or other tracking device for a teacher to encourage an awareness of how much they are moving during the day could increase their motivation to move more. Awareness of their teachers' physical activity and through acknowledging their progress, administrators could encourage and support teacher health during the school day. As in the case of the housekeepers in the Crum and Langer (2007) study, just understanding that the school day can be considered an opportunity to exercise, could help teachers not only benefit from this perception and make them feel better but inspire them to influence their students along the way.

Besides the physical benefits derived from physical activity, there are three documented benefits of physical activity for mental health: prevention, intervention, and quality of life. PA can prevent depressive episodes, it can enhance the effectiveness of treatment and it can improve the quality of life (Faulkner et al., 2015).

As a therapeutic function, physical activity is cited often as a treatment for many mental illnesses, such as depression and anxiety. One study in the meta-analysis by Faulkner et al. (2015) even contends that PA is as significant as medication as a treatment for patients. Although the study adds that research is needed to identify exact dosing and types of PA, they conclude that intentional and consistent exercise is a legitimate intervention for enhancing mental health (Faulkner et al., 2015).

The “feel-good” function of physical activity that Faulkner et al. (2015) identify, is an example of how our body affects our mind. Exercise, movement, and body awareness are all things that involve our somatic experience. This study establishes that increased physical activity supports psychological well-being. Physical activity can be utilized in preventive and therapeutic care. I believe common sense would say this could be applied to children as well. When children feel better physically, they are better able to manage and build resilience (Faulkner et al., 2015).

Another benefit of physical activity for teachers is that it enhances resilience. Resilience is the ability to not only withstand adversity but push through and thrive in the face of it (Reivich & Shatte, 2002). Protective factors of resilience create a foundation for wellness. Reivich & Shatte (2002) list biology, self-awareness, self-regulation, and optimism as some of the protective factors. All of these can be enhanced through intentional physical activity and movement.

“Physical resilience is the body’s ability to withstand stress and heal itself” (McGonigal, 2015, p. 14). Exercise and healthful practices protect our heart and blood pressure and strengthen the immune system to battle illness. With routine exercise, we check our stress and enable better sleeping habits resulting in improved health. Finally, physical exercise is important for mood elevation and well-being (Ratey, 2014; Berger & Motl, 2000). These are all benefits that could make a teacher’s life better.

It is important to discuss the positive impact that movement or physical activity has for a teacher to thrive in a challenging work environment. Utilizing movement conscientiously will create a healthy environment for both teacher and student. It is not enough to provide physical activity breaks for the students throughout the day; the teacher also needs to utilize movement for themselves.

Maintaining self-care in a teaching career is critical for work retention and combating burnout. Physical activity or movement creates three significant impacts to well-being: health benefits, increased cognitive functioning, and mood enhancement.

Teachers are ultimately responsible for the safety of children for a large part of their day. They are also the best and, at times, only adult role models in the room. A student’s experience can depend upon a teacher maintaining their personal health and well-being.

As John F. Kennedy stated, “Physical fitness is not only one of the most important keys to a healthy body, but also the basis of dynamic and creative intellectual activity” (Deuster & Silverman, 2013). There is a correlation between a teacher’s health and their student’s well-being (Harding et al., 2019). A focus on the protective attributes of physical activity for teachers enables flourishing for both students and one of their most important role models, the classroom teacher.

Positive Psychology

After thirty years of helping people suffering from depression and mental illness, Martin Seligman, a research professor of psychology at the University of Pennsylvania, felt there must be something more to his practice and research than helping people to just survive (Seligman, 2011). Working with colleagues who were similarly motivated to study well-being, thriving and flourishing, in 1999, Seligman created the field of positive psychology.

With an increasing body of research, the field of positive psychology has explored how people thrive. Seligman saw the potential for mental health in discovering what makes some people flourish (Seligman & Csikszentmihalyi, 2000). By studying people and their character traits, analyzing individual's lived experiences and the institutions that support them, Seligman's theory focuses on what creates positive attributes that contribute to life satisfaction.

The study of positive psychology is more complex than just being happy (Peterson, 2006). Seligman and his colleague, Christopher Peterson, maintain that to flourish is to both understand our strengths as well as our weaknesses and missteps (Peterson, 2006). Positive psychologists study such constructs as resilience (Reivich & Shatte, 2002), character strengths (Peterson, 2006), agency (Seligman, 2011), self-determination (Deci & Vansteenkiste, 2003), meaning, mattering, and belonging (Prilleltensky, 2016), and how they contribute to well-being.

PERMA: A Theory of Positive Psychology

The principles of positive psychology consist of foundational elements. As Seligman began to focus his research on well-being, he honed in on five key elements that people freely choose that increase their well-being. These elements became the framework for his theory of well-being and include positive emotions, engagement, relationships, meaning and achievement (PERMA) (Seligman, 2011). Each element required more than merely increasing well-being; the elements had to be merit based, pursued, and measured independently of each other (Seligman, 2011). Through studies, The PERMA model was determined to be an “antidote for youth depression” (Kern et al., 2015, p. 262), every element measured specifically and inter-dimensionally, encouraging the growth of positive psychology skills.

For instance, as Barbara Fredrickson (2009) describes in her book, *Positivity*, building resources through understanding positive emotions known as the “P” in PERMA, leads to an upward spiral of good feeling. Frederickson’s broaden and build theory focuses on a person’s ability to capitalize off the good feelings resulting from positive emotions. For example, emotions such as joy, as seen in children’s dance and play, or love shown by one child helping another, when noticed and acknowledged, can build wellbeing in that child.

The “E” in PERMA is engagement. In education if we make our curriculum relevant and meaningful, the student attaches to the learning. An example of physical activity and engagement in the classroom looks like “beautiful chaos.” This is my own term to describe an environment where the children have choices in how they spend their time all with the purpose of acquiring academics but without sedentary learning. Facilitating such a space includes group collaboration, moving freely around the classroom environment, and working with a variety of materials.

Teachers improve student engagement and motivation through a variety of behaviors such as modeling, enthusiasm, and active and positive feedback (Skinner & Belmont, 1993).

Seligman defines the “R” as in relationships which can enhance well-being. Education can be a solitary pursuit, but it is in collaboration with others that children connect meaning to knowledge (Golinkoff & Hirsh-Pasek, 2016). One way to work with others is by sharing movement or play while learning. Synchronized movement enables a collective experience that can enhance well-being in a classroom (McGonigal, 2019). And, according to McGonigal (2019), creating movement to facilitate learning enables students to develop cooperation and trust. Simple running games of tag or capture the flag enable students to work on teamwork thus fostering relationships.

The “M” in PERMA focuses on meaning. By attaching meaning to activity, a student may understand the reason for striving for academic achievement. Seligman’s idea of meaning as a fourth domain of well-being makes sense. If we can see that running could give our brain fresh inroads to learning or that walking can create a space to relax an overtaxed brain, then we can give meaning to why we do activities to enhance our learning.

In assessing student achievement or the “A” in PERMA, the final element of Seligman’s model, Kern et al. (2015) notes the difference between objective and subjective assessment in relation to achievement in school. In school, achievement is often portrayed or bestowed on the student as an objective accomplishment, for instance as a grade given for an assignment. This objective achievement is expected and accepted. In Kern’s et al. (2015) study, subjective achievement was not as black and white and to post accomplishment the student often had to develop skills of perseverance or mastery. Often the achievement becomes an intrinsic motivator

which is part of the skills that positive psychology points out are crucial to students' development in both academic and well-being skills.

The Positive Education Movement

In Seligman's early study of positive psychology in institutions, he found a natural connection with educational institutions. Posing the questions to an audience of parents on what they most desire for their children, Seligman surmised the top answer to be "well-being". He then pointed out that the traditional school was not focused on well-being but in fact was weighted towards acquiring rigorous academic skills (Seligman et al., 2009).

Seligman and his colleagues surmised that principles of positive psychology could and should be taught in schools as a buffer against depression, an aid to greater learning and creativity and to promote life satisfaction. Embedding the theories of positive psychology into an educational institution is seen in Seligman's seminal study at a school in Australia (Seligman et al., 2009). Utilizing the research from the Positive Psychology Center at the University of Pennsylvania, Seligman and company set out to embed positivity in an educational environment which resulted in a first look at the benefits of positive education. This school-wide program was focused on the Geelong Grammar School in Melbourne, Australia.

The program was composed of fifteen members from the Penn program traveling to train more than 100 faculty members at the Geelong Grammar School during a few months of the school break. Seligman and a few of the Penn trainers remained in residence to provide further support through the entire school year in addition to welcoming visits from positive psychology scholars who lectured on studies validating principles of positive psychology theory (Seligman et al., 2009).

The Geelong staff agreed that the project's success stemmed from the fact that they were able to personally experience benefits of positive psychology principles, apply them to their own well-being thus better understanding how these skills would benefit their students (O'Connor & Cameron, 2017). Because the program was rolled out to the faculty when they had time to focus (during the school break) the faculty said their engagement and competency in acquiring the information increased. Further, it was the support from the entire school community, the feeling that everyone was focused on a goal and that the program was to be supported throughout the year, that their success was secured (O'Connor & Cameron, 2017).

Positive education, with an eye to the elements of PERMA, creates a foundation for thriving in our classrooms. In Kern et al. (2015), the PERMA framework was viewed as a multidimensional approach to assessing student well-being and one that could be utilized by teachers. By observing and evaluating the connection between students and Seligman's five domains, teachers could begin to address specific student wellness needs and tailor interventions to connect to PERMA.

Positive education focuses not only on the academic success of the student but also on their social and emotional well-being (Seligman, 2011). It is the application of the science of positive psychology within an educational context which encourages students, teachers, and the school at large to flourish. The focus is on the whole child and aims to enhance well-being through the practice of specific skills within a learning ecosystem where thriving is a goal.

PERMA and Physical Activity (PERMA-PA?)

While physical activity is not included as a domain in PERMA, it can be aligned with each of its elements. In the article, *A multidimensional approach to measuring well-being in*

students, Kern et al. (2015) cites the PERMA model and recommends embedding physical activity into the educational day, not as an extra class but as a part of every aspect of the curriculum. Although the study corroborated the use of PERMA as a framework to measure youth wellness, there was a limitation in determining whether positive emotions were a result of physical activity or the cause of them (Kern et al., 2015). The study concludes that there could be a use for an expansion of the PERMA model to include physical activity in the educational setting.

In the Kern et al. (2015) study, the researchers added questions based on physical vitality and physical activity as a way of informing the health and needs of the students. Likewise, it has been suggested that a “V”, as in vitality, be added to the PERMA model, defining vitality as energy, motivation, and resilience (Van Steenbergen et al., 2016).

I believe physical activity “PA” would be a welcome addition to the PERMA framework. PERMA is considered by some as a model that deals with “from the neck up”; PERMA plus physical activity (PERMA-PA) would add a much-needed health dimension for well-being and connect the head with the body. In Norrish and Seligman’s (2015) Model for Positive Education framework, physical health has been included as a sixth dimension. This health focus is described as facilitating learning to create habits to improve physical and psychological health (Norrish & Seligman, 2015).

Positive Psychology Interventions and Education

Each morning my fifth-grade students line up at the door of the classroom, waiting for a greeting, a hug, or a high-five. It’s a moment only for them and they line up and wait for it. It’s personal and it’s positive because I connect with each student, individually giving an affirmation or a compliment. This short but personal connection is considered a positive interaction.

After the school bags are unpacked and the bell rings, we start our day as a community with “the song of the day.” A student picks a song (which I describe could be played for your parents or the principal, thus eliminating questionable lyrics) and we listen as the words scroll across the white board. The students then write for five minutes about anything they appreciate about the song, whether it is a memorable line, the rhythm, or the singer’s voice. A whole class discussion about our reflections is led by the student who shared their song. At the day’s end and as a reward, the class is guaranteed a dance moment as we replay the song. This intervention takes about 10 minutes out of our morning and afternoon but a practice such as this is a sweet moment to a ten-year old’s day. Together my students listen and share; they write and reflect; they sing and dance; they move. And this, I venture to describe, is a classroom grounded in principles of positive psychology.

“Recognition derives from the nurturance that we receive from others. The more we benefit from positive messages and attention in childhood, the more secure we are going to be in adulthood.” Isaac Prilleltensky (2016)

Our morning interaction enables both my students and I that moment of well-being. When I started the “song of the day activity,” I was not aware of the term positive education or the robust science which supports it. But witnessing subtle transformations of interest, creativity, joy, and compassion in my students’ reaction to this activity gave me a bump in my own personal positive emotions. Intuitively, I understood taking this short ten minutes of our day to listen, share and sing was a positive and life affirming curriculum to facilitate for my 5th graders.

To make a choice to be happy, to have control over your attitude, to be capable of deciding how to view things are all part of a growth mindset. Although we have evolved as a species from fear, flight, or fright reactions to danger, currently we should no longer have to live with this dread of impending peril (Pawelski, 2003). To anticipate disease or fear that it will eventually get us is not the way to thrive. Instead, positive psychology focuses on creating interventions designed to encourage practice towards improved well-being. Positive

interventions are intentional activities utilized to encourage habits that create positive change or that not only sustain but enhance well-being.

Well-being is not the absence of illness but the pursuit of a better life, one of flourishing (Pawelski, 2016; Seligman, 2011). The drive for flourishing can be sought by voluntary activities that increase positivity. To empower resolve we create habits, focus on self-agency towards goals and generate an aura of hope and belief that happiness is within our control. James Pawelski (2016) describes these interventions using a metaphor of a superpower cape of green or red. Positive interventions are weighted towards growing good (green cape) but occasionally needing a red cape response of defensive fighting against the bad. Green or red, the positive intervention cape needs to be individualized and the activities must fit the individual for a chance of greater success. To that end, physical activity in school to increase wellness is considered by me to be a green cape positive intervention.

Due to the extended time that children spend in school, educational institutions are a natural place to incorporate more than traditional academic courses (Seligman et al., 2009). To Seligman's point, as already stated, in most states physical education is not considered an academic subject. Studies show that classes or activities that include movement have a positive correlation to increasing academic abilities (Singh et al., 2012).

Positive interventions, or behavioral strategies, have been studied and verified to have increased wellness in middle school populations (Shoshani & Steinmetz, 2014). Although this is an older sample than elementary school, I maintain that these same studies could be replicated in younger students. Interventions which included daily exercises in writing about gratitude, understanding and utilizing personal strengths in new ways were introduced and used throughout the year. These interventions were found to increase children's self-esteem, self-efficacy, and

their ability to increase hope or optimism (Shoshani & Steinmetz, 2014). Wellness programs that the study investigated included elements of physical health, perspective, engagement, positive relationships, meaning and purpose, all elements echoing recommendations of positive psychology (Shoshani & Steinmetz, 2014).

By aiming the interventions first towards teachers, researchers (Shoshani & Steinmetz, 2014) acknowledged the importance of teachers' well-being for a school community. Having teachers participate in Values in Action Strengths Inventory (and focusing on using new strengths daily) and daily writing on experiencing positive emotions, the interventions were first directed towards teachers. The study's hypothesis included the idea that by granting teachers the time to work on their own well-being and personal challenges, they would be better equipped to facilitate the intervention in their classroom. The interventions' focus on increasing engagement by training classroom teachers, creates both a common positive language and requires the active support from administrators. These outcomes increased the intervention's success and positively shifted the culture of the school community. All stakeholders in the school found an increase in self-esteem and personal efficacy, which resulted in school-wide success (Shoshani & Steinmetz, 2014).

Movement Interventions: Practical Strategies to Use in the Classroom

Physical activity is a positive intervention which can easily and inexpensively be embedded into the classroom environment. Like the Bailey Run that my former student continues to rely on, physical activity and movement create habits and routines that enable well-being. For our students, learning these positive behaviors early in life ensures positive skills that will benefit students as they grow and develop into adults. Allowing behaviors that increase

movement will elicit wellness for both individuals and their community (Faulkner et al., 2015). Students and teachers alike will benefit when physical activity becomes a natural part of their day. Teachers who feel comfortable in their own physical literacy and have confidence in the science that supports more physical activity embedded in their day, are more likely to incorporate physical activity into their curriculum.

“Motion is lotion” is a simile used when explaining why movement is important for our body. This phrase, coined by an orthopedic surgeon, is referring to the synovial fluid released when we move our limbs and its soothing quality within our joints (Connolly, 1998). As the lotion smooths our joints, the pleasure we feel when moving can infuse our entire self. Taking exercise breaks or just getting up and moving about the room is a quick jolt to waken a student’s mind before solving math problems. Movement such as swaying while we join in song, lifts mood and adds a happy buzz to the classroom.

A five-minute boot camp to break up an academic subject is an example of embedding physical activity bursts to increase physical activity and improve physical literacy. Utilizing three full body exercises done in forty second bursts with a 20 second rest in between, is a quick way of practicing foundational movement skills like jumping jacks, running in place, squats, or any interchangeable full body exercise. At the beginning of the year, the exercises are novel and feel difficult but with consistent effort through the year, I see confidence grow as the students begin to master the technique and increase their pace and repetitions. Students eventually become the leaders of the bootcamp burst, creating their own exercises, and becoming coaches, leading the group activity. These experiences create opportunities for self-direction and self-motivation.

If bootcamp doesn't fit into the class due to physical limitations of space, then many movement activities can be performed in the classroom. Even sitting at the desk, the students can perform arm motions that tax their strength and resolve. Putting on timers and challenging children to exceed their earlier attempts is intrinsically motivating. Physical activity can be scaffolded by the teacher for the class to grow in ability. Some schools have long standing running challenges that continue throughout the year. Brainstorming at faculty meetings for ideas on including movement in the classroom will yield long lists. Breathing exercises, yoga and guided meditation all fall under a category of breaking up the day to increase our physical capabilities. A sensitivity to students with physical disabilities should be considered and addressed when initiating activities within the classroom. There are numerous resources and suggestions to promote inclusion when using physical activities to enhance all students' experiences.

Many children have a natural sense of play and innately know how to interact with others. As teachers we are facilitators of the space children need to explore, be curious, move, sing, and dance. Setting up a classroom to engineer more play and movement is doable in most classrooms. Moving desks to the corner to create space in the middle of the room takes minutes if you welcome help from the children. Using chairs as exercise tools is an effective way to use what you have. Knowing as I plan my day where I can fit in a 10-minute run (usually before tests or anything which creates stress) or a 5-minute boot camp (to blow off steam or awaken a sleepy mind) or even taking off shoes to do yoga poses, creates opportunity to move. Creating the space for play and movement takes some creativity but also sparks excitement. When children see their environment change, even a little bit, the switch is thrown towards enthusiastic anticipation.

When people think of movement in school, PE class, recess or simple brain breaks during class time come to mind. Time for these types of movement interventions is granted or controlled by the school's daily schedule. To better understand how physical activity can improve the student's experience, we need to think of movement as an available resource, and a tool that can infuse the classroom or school environments with potential energy at any moment. Children's energy abounds within the walls of the elementary school unless we squash it with too much structure (Rieber, 2001).

Conclusion

Physical activity plays a significant role in the overall physical, emotional, and academic well-being of students and this paper makes an argument for why the field of positive education should incorporate physical activity into its framework. Teachers play a critical role in bringing physical activity into their classrooms and need to not only understand the science behind this but also create strategies for how they can add physical activity in an organic way. Physical activity is as important to the learning environment as academics and can easily be embedded into the daily school schedule.

With buy-in from administrators, teachers, and educational institutions, a practice of including physical activity into our daily schedule will produce benefits for wellness at school and beyond. Physical activity infuses us with energy. Movement increases learning centers of the brain, becomes a moderator for positive classroom behaviors, and enhances moods for students - all factors that lead to better learning.

If teachers could take the time to understand their own relationship to movement, and attribute outcomes to their own health, vitality, and mood, then they will know the positive

benefits of physical activity. By understanding the science that supports these ideas, teachers engaged in positive education practices could use physical activity as a sixth PERMA component to educate the brain and the body of the whole child. Imagine how successful schools would be then!

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