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Physical Activity in The Elementary Classroom

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Physical Activity in The Elementary Classroom

By

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An Honors Thesis Submitted in Partial Fulfillment of the
Requirements for Graduation from the
Western Oregon University Honors Program

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Thesis Advisor

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Abstract

It is clear that physical activity affects the body and helps us to become healthy and physically fit, but there is an increasing amount of research being done suggesting that the benefits of physical activity stretch much farther than building and toning muscles. During physical activity, the brain is influenced in ways that have the potential to improve academic success among elementary school students. The purpose of our thesis was to analyze the research that has been done on the effects of physical activity on the brain by creating this literature review that helps determine how physical activity can be utilized in the education system. We then took that information and compared it to our theories so that we could better understand where current issues lay and how they might be addressed as we enter the teaching profession. Based on our research, we developed a pedagogical theory of best practice which we can now put to use in our future teaching careers. To conclude this thesis, we have included ways for teachers to implement our findings through activities such as brain breaks, teaching strategies and school wide fitness programs, so that our research benefits more than just our own classrooms. Our goal is to impact the lives of as many students as we can, in the area of physical education.

Introduction

It is clear that physical activity affects the body and helps us to become healthy and physically fit, but there is an increasing amount of research being done suggesting that the benefits of physical activity stretch much farther than building and toning muscles. During physical activity, the brain is influenced in ways that have the potential to improve academic success among elementary school students. The purpose of our thesis is to analyze the research that is being done on the effects of physical activity on the brain through a literature review in order to determine how physical activity can be utilized in the education system. As a result of our research, we have found that there is a need for resources to help teachers implement physical activity in the classroom. We have included in our thesis various brain breaks, teaching strategies, and school wide resources that we hope will inspire teachers, like ourselves, to bring more movement into the classroom. By creating easy to use movement resources, we aim to empower teachers to break the pattern of an increasingly academic education system that is pushing students to higher standards at the expense of their physical well being. We also have included our personal pedagogies on how physical activity should be implemented in the classroom. We hope that our findings will encourage all teachers, regardless of content specialization, in their own professional development in regards to physical education. Physical activity affects every student in every subject in every grade and should not be confined to the traditional view of P.E.

Literature Review

Prologue

A Brief History

To be able to properly analyze the system of physical education that is in place in the United States today, it is important to look at where it came from, where it is now, and, most importantly, where it should be. The influence of physical education in the United States came from three different nations in Europe. Germany, Sweden, and England all had different aspects of physical education that they brought to the table. Germany was in the direction of heavy apparatus in order to stay fit while Sweden promoted light apparatus for fitness. The English considered the competitive side of games and sports to be important in terms of moral development. All three nations influenced how the United States would form their own fitness. In the 1800s, schools began to incorporate physical fitness into the school day, but this was only in private schools. It was not until 1855 that physical education was put into public schools. “During the early twentieth century, several educational psychologists, including Dewey, Stanley G. Hall, and Edward Thorndike, supported the important role of children's play in a child's ability to learn. In line with the work of Wood in physical education, and the theoretical work of prominent educational psychologists, *The New Physical Education* was published in 1927 by Wood and Rosalind Cassidy, who advocated *education through the physical*.”¹

Introduction

Physical activity is the act of engaging the body in movement. Physical education, while it may encompass physical activity, is educating students about the importance of physical activity, and how to develop and maintain a healthy lifestyle. In the 1920s, states started passing laws that required physical education, and those laws lead to what physical education looks like

today. Presently, it focuses more on overall health rather than on physical movement itself by looking at things like eating right, sexual health, heart health, emotional health, and issues of obesity, among many other things.

In the past 20 years, however, with the increase of importance on standardized testing nationwide, educators' hands are being tied. Pangrazi (2013), a bestselling author of physical education textbooks from Arizona State University, states that, as a result of “many factors, including academic pressures for standardized test scores and related legislation, physical activity and other healthy behaviors in the school setting are often restricted. More time is being devoted to core content, such as math and reading, while time for physical education and other “frill” subjects seems to be diminishing.”²⁸ The question brought up here, which will be addressed in this literature review, is whether or not this is a problem. Are teachers making a mistake by putting too much of an emphasis on standardized testing and neglecting physical education?

The concern raised here is shared by many other experts in the field of physical education. While the over importance of standardized test scores is a major issue, it is only one strand of the ongoing discussion on the importance of physical activity. John Medina, a developmental molecular biologist, for example, focuses his research on physical activity and how it influences the brain. His research addresses the question of whether or not physical activity can improve learning. John Ratey, an Associate Clinical Professor of Psychiatry at Harvard Medical School, provides insight into some of the benefits of physical activity both as a student and as a member of society. Jean Blaydes, an internationally known education consultant and author, offers potential solutions that combat the decline of physical activity in the

classroom. This literature review will present the research and opinions of these experts in order to build an understanding of where physical education is currently and where it needs to go.

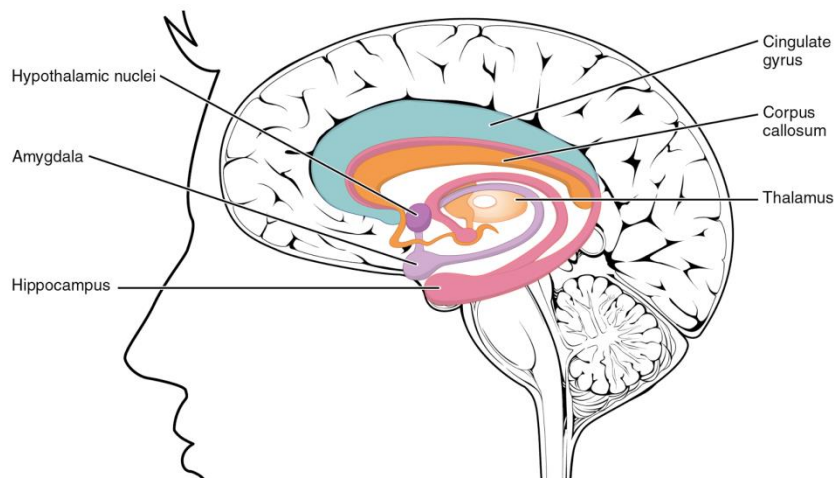
What the Experts Say

John Medina, author of *Brain Rules*, offers insight into how the brain functions. Throughout his book, Medina provides 12 ‘rules’ that he believes, when followed, will help individuals keep their brains functioning at top capacity so they can be successful in all aspects of life. He focuses on the environments of work and school in particular. For the purposes of this study, two of the most relevant ‘brain rules’ will be discussed.

Brain Rule #2 is as follows, “Exercise Boosts Brain Power.”³ In this section, Medina offers the results of his research into what some of the benefits of physical education are. He makes the claim that, “a lifetime of exercise results in a sometimes astonishing elevation in cognitive performance, compared with those who are sedentary.”³ It is clear what Medina is targeting here: we need to be more active. Throughout his book, Medina comments on how so many members of today’s society are living sedentary lives. Students sit at a desk all day in school and then get a job where they sit at a desk all day for work. Here he makes the claim that those who stay active are at an advantage over those who live the standard American sedentary lifestyle. He specifies this assertion further by stating that “exercisers outperform couch potatoes in long-term memory, reasoning, attention, and problem-solving skills,”³ all of which are qualities that are valued in schools and workplaces. Medina also comments that “the same is true of fluid-intelligence tasks, which test the ability to reason quickly, think abstractly, and improvise off previously learned material in order to solve a new problem.”³ If these functions are

all improved with exercise, as Medina suggests, then Medina is right to encourage an activity level increase among individuals.

Medina does not simply make assertions, though. He offers fact based evidence for why he makes the claims he does. The brain-derived neurotrophic factor (BDNF), or “Miracle-Gro, brain fertilizer”⁴ as *Spark*’s John Ratey calls it, is a protein in the brain that aids in the production of new brain cells, a process known as neurogenesis. Medina has found that research suggests exercise stimulates BDNF which results in an increased production of healthy brain tissues. In fact, the cells that have the greatest response to this have been found to be those located in the hippocampus. The hippocampus is located in the medial temporal lobe of the brain and is most closely associated with long-term memory and cognition.⁵ Also located in the hippocampus is the region known as the dentate gyrus. Not only is this one of the regions of the brain where neurogenesis occurs, it also takes input from the entorhinal cortex and organizes and sorts it into a patterned output, which it sends to the hippocampus.⁶



Exercise affects the dentate gyrus by increasing blood flow through that region of the brain. Medina states that “this blood-flow increase, likely the result of new capillaries, allows more brain cells greater access to the blood’s waitstaff and hazmat team.”³ By this, Medina is

referencing the fact that, by increasing the tissue production, the brain can more readily access oxygen and remove waste from the bloodstream. Essentially, exercising affects the brain in particular in ways similar to how one might expect it to affect the body as a whole; it conditions the brain just as it does the body. But these effects, as Medina points out, have specific benefits related to brain function and cognition that go beyond simply being more healthy.

John Medina also invests research into the connection between mind and body. He approaches this topic from the perspective of stress and the brain in the context of physical activity. Medina argues that stress is a very emotional human response, yet it impacts cognition in significant ways. This brings the discussion to Medina's Brain Rule #4 which states that "Stressed Brains Don't Learn the Same Way."³ By this he is referring his assertion that if an individual is faced with an extreme amount of stress, or if they remain stressed for an excessive amount of time, that stress will begin to affect their learning in a negative way. Medina's research shows that "stressed people don't do math very well. They don't process language very efficiently. They have poorer memories, both short and long forms. Stressed people do not generalize or adapt old pieces of information to new scenarios as well as non-stressed individuals. They can't concentrate. In almost every way it can be tested, [says Medina,] chronic stress hurts our ability to learn."³ At a surface level, Brain Rule #4 seems unrelated to Brain Rule #2, until the anatomy of brain and the influences exercise and stress have on the brain are looked at more closely. Interestingly enough, the problems caused by stress are directly related to Medina's research on exercise in that both exercise and stress directly influence the hippocampus. The difference between exercise and stress is that, while exercise builds new tissues and increases brain function, stress harms those tissues and decreases brain function. Medina states that "stress hormones can disconnect neural networks, the webbing of the brain

cells that store your most precious memories... [they can also] stop the hippocampus from giving birth to brand-new baby neurons. Under extreme conditions, stress hormones can even kill hippocampal cells.”³ This is significant because the process involved in the destruction of neuron pathways, it would appear, can be addressed and reversed by the process of neurogenesis that is induced by exercise.

Medina also offers a case example that serves as physical evidence to his claims. In a study on school aged children, “children jogged for 30 minutes two or three times a week. After 12 weeks, their cognitive performance had improved significantly compared with prejogging levels. When the exercise program was withdrawn, the scores plummeted back to their preexperiment levels.”³ This case study provides clear evidence that physical activity has a strong impact on cognitive performance.

Medina is not alone in the search for evidence that exercise can have positive benefits on cognitive performance; Benjamin A. Sibley and Jennifer L. Etnier (2003) followed suit. They conducted a meta-analysis of the results of numerous studies related to physical activity in correlation with cognition in children. Based on their research, it was concluded that, “for children, physical activity has a positive association with cognition...[and their findings] support a positive effect for activity on cognition.”⁷ This means that there is a marked correlation between students’ physical activity levels and higher levels of cognitive ability. It was found that students “exposed to physical activity showed an improvement in cognition equivalent to approximately ½ of a standard deviation.”⁷ An improvement of this size is fairly remarkable considering that the increase only took place over the course of the study. Results like these provide significant evidence to support Medina’s assertions.

Medina takes the discussion further, however, by posing the question of how much exercise is needed for these benefits to be realized. The answer, he suggests, is “not much. If all you do is walk several times a week, your brain will benefit... The gold standard appears to be aerobic exercise, 30 minutes at a clip, two or three times a week. Add a strengthening regimen and you get even more cognitive benefit.”³ However, the debate that lies here is whether or not this activity should take place as a part of the school day. According to the 2014 overview from SHPPS (School Health Policies and Practices Study), “82.8% of elementary schools provided daily recess for students in all grades in the school. 54.7% of schools offered intramural sports programs or physical activity clubs to students, and 26.5% of elementary schools, 84.8% of middle schools, and 94.1% of high schools offered students opportunities to participate in interscholastic sports.”⁸ These statistics suggest that students have the time and ability to be active and to achieve the recommended activity levels if they choose to do so. Many students do not, but is this the schools responsibility?

Regardless of when and where it takes place, it is clear Medina supports the idea that physical activity increases brain function. He is not alone in this belief, either. A study done among sixth grade students in Michigan regarding the effects of physical activity on academic success found that “students who either performed some or met Healthy People 2010 guidelines for vigorous activity had significantly higher grades than students who performed no vigorous activity.”⁹ This study was done over two semesters and an increase in student grades was found both times. Not only that, but the standard level of physical activity used in the study, the Healthy People 2010 guidelines, aligns closely with what Medina suggests in his work as recommended activity levels. With so much evidence suggesting that physical activity leads to higher grades, it is a wonder why is it not being more readily included throughout the school day.

TIME's Bonnie Rochman offers an answer. She makes the comment in her article that "unless you're required to do something, you probably won't."¹⁰ Schools have many requirements and standards they have to meet each year: enough that it is hard for schools to do anything above and beyond those requirements, even though other things, like increased physical activity levels, may be important. Decisions about what a school's priorities are and how requirements should be met are made by the school board. According to an organization called GreatSchools, "the most important thing a school board does is to establish a vision for the community's schools that reflects a consensus of the board, community and district staff. The school board has a wide variety of additional responsibilities, such as adopting a balanced annual budget and issuing interim financial reports, adopting the school calendar, negotiating contracts with employee unions, approving curriculum materials and closing or constructing schools."¹¹ School boards meet monthly and these meetings are open to the community. It is here where parents, teachers, and community members have a chance to discuss both where they feel a school's shortcomings are and to advocate for where they want the schools money to go or what programs they want to see promoted. Unfortunately, as a spokesman from a Chicago school district comments, "rare is the time when parents have come to speak about that (fewer days for PE). More often, he said, "Parents want more time for AP classes, and more time for band. It all costs money."¹² The decline in physical education is one issue among many, and it seems that, more often than not, it is an issue that takes a backseat to other areas of education. It is the opinion of many that school is for academics and including physical activity during the school day is less of a priority because being active does not directly pertain to students' education.

Currently, not very many schools are required to include adequate physical activity levels for their students. According to the 2014 overview of the School Health Policies and Practices

Study, only “3.6% of elementary schools, 3.4% of middle schools, and 4.0% of high schools required daily physical education or its equivalent (150 minutes per week in elementary schools; 225 minutes per week in middle schools and high schools) for the entire school year (36 weeks) for students in all grades in the school.”⁸ For many schools, physical education and health education are combined into one class. This means that while students may get a good amount of physical activity during school for part of the year, there is a lot of the year where the time designated for physical activity is used up by classroom time to meet the requirements for health education. Because of this, it becomes difficult for students to get sufficient exercise during the school day consistently throughout the year, especially when the standards and requirements for health and physical education are taken into consideration.

Rochman discusses the results of a survey that was given to schools across the country regarding their physical education and nutrition policies. The responses given in the survey compared what the schools are actually doing with the laws and district policies concerning physical education that they should be following. Of the states and school districts surveyed, the ones that met the regulations were classified as “strong”, and the ones that recommend practices but do not enforce them were classified as “weak.” The results of the survey concluded that “4% of schools in the six strong states or districts were nearly three times more likely to meet the 150-minute recommendation”¹⁰. This means that only six states ranked in the strong category, which accounts for 4% of school districts. These results suggest that, when schools are actually requiring the recommended activity levels, they are generally able to provide their students with adequate physical activity. “In comparison, 17 states and 29% of school districts were considered weak.”¹⁰ Nearly a third of the schools surveyed recommend physical activity to their students but do not actively implement it, and “twenty-four states and 67% of school districts had no P.E.

policies”¹⁰ whatsoever, meaning activity levels are not even recommended. With nothing holding students and teachers accountable, it is not surprising that activity levels are not being met. Teachers are faced with so many requirements that it becomes difficult to look beyond them. However, “when it comes to mandatory recess, five states were ranked weak [meaning they suggested their students have recess but do not enforce it], and 39 had no recess law. Just 19% of school districts required daily recess, 17% required some recess but less than 20 minutes a day, and a full 64% had no recess policy at all.”¹⁰ While it may be understandable for schools to not meet the recommended activity levels, it seems that they should at least make an attempt. With so many schools falling short, given they are even trying in the first place, it is a wonder why this problem is not at the forefront of more education discussions. The overwhelming majority of schools are not providing their students with the physical activity they need to be healthy. For many, this is not because they are ignoring requirements, but because it is not required of them, so they put their time and funding elsewhere. But this is not always the case, and Rochman, with her article, does a good job of shining a light on an issue that needs to be brought to the surface. It would seem that one of the major opposing forces to providing students with adequate physical activity is indifference. By not placing value on physical education, other issues are, by default, being given more value.

One of the major issues that tends to overshadow physical education is standardized testing and the importance placed on student scores. As mentioned above, research is being done that suggests physical activity supports, rather than deters, good test scores. Going back to the Michigan study, it was found that “numerous studies have shown positive relationships between academic achievement and both physical activity and sports participation, whereas a few have shown no correlation or an inverse relationship.”⁹ The more research that is done, the more a

trend can be seen suggesting that physical activity is good for the brain and helps students perform better. This ties directly back to what Sibley and Etnier found in their meta-analysis. In their results of four related studies, they state that "in each of these studies, time spent by students in PE was significantly increased at the expense of time spent in academic classes. In three of the studies, significant improvements in academic performance were found with increased PE, and in the fourth (the South Australian study), there were no significant differences in performance."⁷ According to these results, it is implied that physical activity benefited student academics in all of these situations because, even in the study where there was no significant difference in performance, students still achieved the same level of performance with less time spent in academic classes, suggesting that their time was more productive due to physical activity.

Sibley and Etnier also make the case for the child as a whole. This is the idea that teachers must approach each student as an individual who is made up of many aspects and qualities. It is the idea that in order to fully teach a student, a teacher has to reach both their mind and their body. They assert that "the mind and body are one entity, and... anything that happens to one will affect the other. Physical educators therefore believe that the "whole child" comes to school to be educated and that this requires both mental and physical training."⁷ By this argument, physical activity becomes an absolutely necessary part of the school day because it reaches the body while academics reach the mind. However, from this mindset comes an opposing argument. For some, the idea of the "whole child" applies with more of an emotional sense. Teachers cannot simply teach academic content to each child the same way, they have to be considerate of students' thoughts and emotions, learn how they process and respond to information, and form their teaching methods accordingly. It is from here, also, where many discussions on self-esteem

come. The idea here is that if students have a low self-esteem, they will not be highly motivated to learn. Jillian Croll writes about adolescent self-esteem, stating that “teenage girls face a lot of pressure to look a certain way. If too much emphasis on being thin is placed on them in school, it can lead to eating disorders or major self-esteem issues.”¹³ While it may seem extreme, Croll points out that “even educational materials have messages regarding body size. Textbook images of girls have gotten more slender every decade since 1900, while images of boys have not changed significantly.”¹³ Even if it is not explicitly stated, there is pressure being put on students to look a certain way or be a certain weight. Schools may advocate for more physical activity in order to help students be more healthy, but may inadvertently send the underlying message to their students that they need to be thin. “Societal reinforcement of body image concern, in the form of a multibillion-dollar diet and weight loss industry, aids in maintenance of body dissatisfaction and the elusive search for the perfect body. Societal promotion of the thin ideal may also lead to prejudicial treatment of overweight individuals or teasing based on weight and shape, especially among youth.”¹³ For some students, being asked to perform physical activity draws their attention to the fact that they don’t have what society deems the ‘ideal body’. It is not surprising, then, why some people would not want an increase in physical activity during the school day. For overweight students, this focus on physical fitness may exclude them or cause them to feel insecure or embarrassed. Croll takes this argument a step further than embarrassment, however, suggesting that an “over-concern with body image can have damaging effects...[and] can lead to restrictive dieting and unhealthy weight control methods which may lead to potentially dangerous disordered eating behaviors.”¹³ While this assertion may seem extreme, the statistics she provides to back it up are shocking. According to her research, “in large scale studies, approximately 30% of boys and over 55% of girls report using unhealthy

weight control methods such as vomiting, laxatives, diet pills, cigarette smoking, and diuretics in effort to lose weight.”¹³ And for those that would argue that this is not relevant in the elementary grades, Croll comments that “at 8 years-old, girls believe that weight control is strongly associated with self-worth and view dieting as a means of improving self-worth.”¹³ Society places a high value on being thin, yet more and more society is promoting the idea of loving one’s body no matter the shape. It is the people in this movement that would push back against too much of an emphasis on physical activity in schools if that emphasis is there for the wrong reasons. Schools should help their students be healthy, not just so they can be skinny, but because it is good for both their minds and bodies.

Self-esteem is not the only issue causing pushback. While it seems that the question more often raised by the large amount of data supporting the inclusion of physical activity in the classroom, is why physical education is still so poorly supported, there are other factors contributing to the pushback. In regards to this issue, "school administrators often cite budget restrictions and the need to spend more time on “academic” subjects as the primary reasons for cutting PE programs. Due to the facilities and equipment, specialist instructors, and insurance required for PE, it is more expensive to maintain when compared to other subjects, making it one of the first areas to go when budget cuts are made.”⁷ Not only is it expensive, but it is often not a priority for many school districts whose funding relies on the academic success of its students. Title I is the largest K-12 federal funding program and it “provides over \$13 billion to local districts to improve the academic achievement of children in high-poverty schools.”¹⁴ The English Language Acquisition Program provides “\$675.8 million to states to assist schools in improving the education of limited English-proficient children by teaching them English and helping them meet state academic standards.”¹⁴ The funding that schools receive is often

contingent on their efforts to improve academic success among students. In combination with initiatives like the Common Core State Standards which are “a set of clear college- and career-ready standards for kindergarten through 12th grade in English language arts/literacy and mathematics...which are designed to ensure that students graduating from high school are prepared to take credit bearing introductory courses in two- or four- year college programs or enter the workforce.”¹⁵ teachers are feeling pressure to cover all of the content in order to provide their students with all of the information and skills they need to be successful on standardized tests. Sibley and Etnier discuss this issue as well, commenting that the over-importance of test scores “has led many educators to believe that more time needs to be spent in the classroom specifically preparing for these tests.”⁷ The flip side to this is that, the more time teachers feel they need to devote to academic content instruction, the less time they feel they have to devote to things like physical education. Pangrazi would argue that this is not the case, commenting that “one strategy for physical educators is to camouflage specific content...into lead-up games or various locomotor activities.” He believes that “physical education can be a prime location for integrating academic content for students.”² According to Pangrazi, teachers shouldn’t feel pressured to give up physical education time because of a need for more academic instruction time. Physical education and academic content can go hand in hand and it may even benefit the students to do so because of how the brain responds to physical activity.

In the opening address of the National P.E. Institute in 2014 for teachers seeking professional development, Pangrazi makes the comment, “Physical Education is about physically educating kids.”²⁸ He tries to make the point that physical education has to change from sports based play time to educating students about ways to be healthy and exercise as well as giving them actual ways to keep active throughout their lives. In his address, he also talked about asking

students, “What do you know well that you can use the rest of your life?”²⁸ If they can answer that question with some type of activity of getting their bodies moving, one that is sustainable into adulthood, then that is when Pangrazi believes you gave them a good physical education.

He spoke on the progression of physical education and acknowledged that while sports used to play a huge role, this is an old fashioned way of teaching physical education. With obesity rates as high as they are, we know we have to change something. Simply just playing games and sports in P.E. is not helping fight those increasing numbers of obesity that are haunting our young citizens. Pangrazi had this to say about sports in P.E., “It’s part of it, it's not all we are.”²⁸ He commented that if sports were the only thing P.E. class did, then a large portion of people would sit on the side and not engage in the activity. Having such activities in P.E. gives students who do not consider themselves “athletic” an out. Because everyone responds differently to physical education, requiring every student to do the same exercise program is a very ineffective way of teaching students. For those students who do not find sports engaging, you must give them other ways to exercise their bodies, otherwise they will become complacent and not value exercising their bodies the way they should.

He also made a very interesting point when he said, “All this fitness testing, all we did hasn’t made a darn bit of difference. We are fatter than ever.”²⁸ He continued on to explain that this did not make a difference because of the same issue as discussed above; treating all students as if they learn the same way. He talked about how teachers are not educating students by having them simply play games. They are not benefitting students as much as they could if they taught them all the different ways there are to stay fit. They are not educating students to be lifelong exercisers, and he believes that push-up and sit-up tests are not going to change that. Pangrazi emphasized that we need actual teachers, not teachers who sit and direct games. He made

mention that when he tells people what he does for a living, they make remarks along the lines of, “well that must be nice you just get to play games with them, are you a coach?” Pangrazi talks about how that is the exact opposite of what he aims to do, and how he hopes to change the field of physical education by providing techniques for teachers to use so they do not fall into that same rut. Similarly, that is why he speaks at conventions like the National P.E. Institute, where like-minded individuals come to learn how to better teach and encourage physical education in schools.

John Ratey works towards a similar goal as Pangrazi; educating school systems about the need for an increase in physical activity. Ratey is an internationally recognized expert in Neuropsychiatry. Having over 60 peer-reviewed articles and 8 published books in 14 different languages, he is now considered one of the world’s best authorities on the brain-fitness connection. While many of his articles and books touch on the brain-fitness connection, his book called “Spark-The Revolutionary New Science of Exercise and the Brain” demonstrates and explains some of the benefits that come with fitness in regards to the brain, and shows the importance of fitness in terms of its effect on learning.

Specifically in Spark, Ratey goes right to the heart of where fitness and learning have the potential to collide: schools. Spark looks at Naperville Central High School in Chicago, where they implemented a fitness plan that is creating a change Ratey would hope to find. At Naperville Central High School, students are encouraged to participate in a Zero Hour PE class. Students in the class are required to run the mile once a week. This Zero Hour PE takes place before the school day starts, and is intended to get the students moving so their brains are ready to soak in the learning throughout the day. The question the teacher of this class struggled with, however, was how to grade students’ performance in the mile. The teacher in charge of the

program decided that the best way would be to grade based on effort. However, there was a need for a more quantifiable test, so the grading scale was modified so that students were being graded on their average heart rate rather than on effort. This strategy for grading personalizes physical education for each student rather than comparing them to their peers. As a result, they are encouraged to do what is best for their own health, a grading system Pangrazi could agree with.

With this class being a zero period, they still have all the same content instruction time, but they made extra time at the beginning of the day for students to get their brains going by exercising. Since implementing this zero period, they have seen the test scores of students and students' morale in classes go through the roof. Ratey shares in his book about a student who recounts that this zero hour allowed her to have a better attitude throughout the day. About this student, and her classmates, Ratey comments that, "at the end of the semester, they'll show a 17 percent improvement in reading and comprehension, compared with a 10.7 percent improvement among the other literacy students who opted to sleep in and take standard phys ed."⁴ This noticeable change of attitude and academic success demonstrates what Robert Sonstroem would call the "mental health" benefits that exercise can bring. Sonstroem says, "The salience of exercise in contemporary society has prompted speculation concerning its mental health benefits. Self-esteem is a major life adjustment variable often associated with exercise."¹⁶ This means that people who exercise often have heightened self-esteem. This is important because, going back to what Sibley and Etnier discussed regarding the child as a whole and the connection between mind and body, if a student's body is influenced in a positive way through exercise, this will influence their mind in a positive way as well. Likewise, if their self-esteem is improved through exercise, this will also improve their body because of the decrease in chemicals normally

produced as a result of anxiety. If implemented correctly, exercise creates a positive cycle of benefits among students.

However, while it may seem logical to see health improvements when adding exercise, when looking at the data concerning academic improvement coming from programs like Naperville, it is only normal to question why what they are doing is working. With Ratey's background in Neuropsychiatry, it is no surprise that he also address the specific processes of how exercise affects the brain. Ratey says, "About 80 percent of the signaling in the brain is carried out by two neurotransmitters that balance each other's effect: glutamate stirs up activity to begin the signaling cascade, and the gamma-aminobutyric acid (GABA) clamps down on activity. When glutamate delivers a signal between two neurons that haven't spoken before, the activity primes the pump. The more often the connection is activated, the stronger the attraction becomes, which is what neuroscientists mean when they talk about binding. As the saying goes, neurons that fire together wire together. Which makes glutamate a crucial ingredient in learning."⁴So, it is no wonder that the students who get up in the morning and get their neurons firing are doing better on tests. However, by referring back to Croll's argument about how too much of a focus on exercise and fitness in schools can inadvertently promote an unhealthy level of attention on body image, an opposing viewpoint can be seen. She explains that "poor body image is strongly associated with low self-esteem and low self-worth, both of which can severely limit the potential for youth to succeed."¹³It seems apparent that exercise is beneficial for students because it is healthy for the body to be active. Yet it is also true that students at this age are highly impressionable and the expectations placed on them by society telling them how they should look are also strong. If students don't feel confident about how they look, it may be difficult for them to actively engage in physical activity, which in turn makes it difficult for them

to reap the benefits exercise has to offer. However, because of the evidence that links physical activity to academic success, it is important that schools find a way to encourage physical activity in conjunction with supporting a healthy body image.

Titusville is another school that is doing similar things to that of Naperville, and Ratey mentions how these types of exercise encouraging programs also encourage learning. “When the students in Titusville or Naperville go for a mile run in gym, they are more prepared to learn in their other classes: their senses are heightened; their focus and mood are improved; they’re less fidgety and tense; and they feel more motivated and invigorated.”⁴ Not only are they more motivated, though, they are also less likely to experience things that hinder their learning. Issues with anxiety can be prevented by exercise. Ratey says, “The fact that aerobic exercise works immediately to fend off the state of anxiety has been well established for many, many years.”⁴ Other things like ADD and ADHD can also be medicated by exercise, as stated in one of Ratey’s Ted Talks. Pangranzi says that, “physical education programs must focus on improving students’ health status.”² He and Ratey are looking at the same thing. Physical education is not just about increasing students physical exercise time, it’s about getting students to create intentional habits that lead to a good state of health. Ratey puts a heavy emphasis on exercise in terms of learning, but also as an overall need for humans in general. With growing obesity numbers and an increasing number of diseases preventable by exercise, Ratey continues to try and bring awareness as well as justice both to the education system and to society as a whole. By starting with the school system and helping children build habits that they will bring with them into adulthood, teachers and parents have a good amount of influence on the future health of society. In order to do this, however, there needs to be a shift in the school environment. In agreement with Ratey, Pangranzi says, “changing the school environment requires the efforts of the entire

school community-namely, parents, classroom teachers, administrators, and students.”² If each of these groups of people are all working towards the same goal, they can make a huge impact on the lives of students; especially in regards to activity levels if higher amounts of physical activity are promoted.

There is a flipside to this argument, however. TIME’s John Cloud writes about how focusing on ensuring kids are active may not be all that important after all. In his article, he discusses a study that was done among children in the 7-11 years age range in which some students received ample physical education through school and some students did not. What he found is that “No matter how much P.E. they got during school hours, by the end of the day, the kids... had moved around about the same amount, at about the same intensity.”¹⁷ This is an interesting finding, and the explanation for why this may be makes sense. The primary analyst on the data, Alissa Frémeaux, comments that, when the students “get home, if they are very active at school, they are probably staying still a bit more because they've already expended so much energy... The others are more likely to grab a bike and run around after school, or maybe join a sports club.”¹⁷ Cloud has two main points that he makes in his article. The first being that kids, and this extends to adults as well, will be as active as they want to be. He comments that ““Trying to force a kid to exercise may not work.’...some people change their lives and become marathoners at age 50. But most of us don't. Our children are no different: whether they get P.E. or not, their bodies "know" how much they want to move.”¹⁷ This suggests that, while physical activity is a good thing, enforcing it at school may not be the best approach to take for all students. For the students whose bodies don’t want to move as much, too much forced strenuous activity could cause them to develop a negative attitude towards exercise. Should that continue into adulthood when physical activity is no longer enforced, it could lead to health concerns.

However, the second point that Cloud makes is that “You can exercise all you want, which will surely make you healthier — reducing your risk of heart disease, diabetes and dementia, for instance — but unless you eat better, or less, it may do nothing to make you thin. All that money we have spent to get kids into P.E. might be better spent helping schools to serve fresh fruits and vegetables at lunch instead of tater tots.”¹⁷ He would argue that, in the fight against obesity, schools should focus more on getting their students to eat healthily rather than forcing them to exercise. It is true that exercise improves health; this is clear from the research of each individual mentioned thus far. But Cloud would argue there is a distinction that needs to be made between being healthy or fit and being thin, because they are very different things. Because of this, he would argue that a change needs to be made in regards to where administrators are putting their focus.

This focus on changing the school environment is what motivates the research of Jean Blaydes. Jean Blaydes was a teacher for twenty seven years. She has experience as an elementary physical educator and as a college professor. She focuses heavily on experiential learning through movement, and aims to educate teachers on how to implement physical education in the classroom. Her website and program, Action Based Learning, offers workshops for educators, presentations from highly qualified teachers, and “kid tested, kid approved strategies that motivate students to learn.”¹⁸ The focus of Blaydes’ work is to improve student learning by utilizing movement in the classroom. It is evident that she strives to advocate for students’ health, well-being, and learning, while simultaneously encouraging teachers to include more movement in the classroom.

Blaydes, like Sibley and Etnier, makes a strong argument for teaching the “whole child”. In a document explaining what her program is and why it is important, Blaydes comments that,

“each child has interactive interdependent intellectual, physical, emotional, social, and moral systems that educators seek to balance in order to achieve maximum student performance.”¹⁸

Blaydes believes that in order for a learning environment to be successful, it must be able to facilitate the development of each of these systems. The outcome of successfully creating this learning environment, according to Blaydes, is “that students will understand how to learn, how to be physically fit, how to control emotions, how to get along with others, and how to set goals.”¹⁸ This is clearly more than just academic content. To Blaydes, academics is just one piece of the puzzle when thinking about what students need in order to really be successful. In the film, *How to Make Learning a Moving Experience*, Jean Blaydes demonstrates some of her teaching strategies and provides fact based rationale for why she teaches the way she does. At the start of her film, as well as in a lot of her material, Blaydes makes the comment that “movement helps children learn” or similarly, that “movement builds the framework for learning.”¹⁹ What she means by this is that the areas in a child’s brain that develop as a child moves and plays are the same areas that are used in learning. Basically, what Blaydes is saying is that “what makes us move is also what makes us think.”¹⁹ She states that a child’s “physical movement, emotional, social and cognitive learning systems are interactive and interdependent” and she believes that “proper development, enrichment, and remediation of these systems are critical to a child’s ability to learn.”¹⁸ It is for this reason that Blaydes makes it a point to include a movement component in every lesson. By getting students up and moving throughout a lesson, they are more likely to commit the material to memory because more systems are active and contributing to students’ learning.

Through her research on the cerebellum, Blaydes has made connections between movement and academic skills, and it is these connections that she focuses on in the teaching

strategies she suggests. For example, the vestibular system is what provides the cerebellum with the information it needs to maintain balance, coordination, and spatial awareness. Blaydes asserts that by having students participate in physical activities that help to build up the vestibular system, it will help them “turn thinking into action and facilitate the student’s ability to place words and letters on a page.”¹⁸ The cerebellum is divided into three lobes, the anterior, the posterior, and the flocculonodular lobes. The “anterior lobe is linked up with the part of the brain that’s important for movement, and the posterior lobe is linked up to the parts of the brain that are important for planning, reasoning, thinking, understanding, language and so on.”²⁰ Blaydes asserts that the functions of these two lobes are connected. On her website, she offers a review of a study done by Henning Budde (2008) that directly relates to this issue. This study concludes that “bilateral coordinative exercise lead to the pre-activation of the parts of the brain which are also responsible for mediating functions like attention.”²¹ This means that exercising acts as a brain warm-up for the cerebellum, making it easier for students to think and process information.

Blaydes often has her students participate in activities where they ‘cross their midline’. The midline is an imaginary boundary between the right and left sides of the human body. Crossing the midline is “the ability to move one’s hands, feet, and eyes not only together, but across and to the other side of the body.”²² For young children, the level of coordination required to complete midline crossing tasks make activities that include crossing the midline challenging. However these activities, asserts Blaydes, are important for brain development and can help students with other skills. For example, “The four visual fields needed for eye tracking in reading are strengthened through navigation of space and crossing the brain and body midlines.”¹⁸ Because of this, encouraging students to participate in midline crossing activities stimulates their brains and helps them to develop that cognitive function. An article from the Pediatric Therapy

Center in Nebraska explains that “crossing midline builds new pathways in the brain which are building blocks for the development of additional complex motor and cognitive skills such as reading, writing, self-care tasks, and physical activity.”²² Blaydes makes a similar statement in her film, saying that “crossing the midline uses the same part of the brain... as processing reading, writing, and math, and it wakes up the vestibular system which is the system that prepares the brain for learning.”¹⁹ This relates back to Budde’s assertion that physical activity serves as a brain warm-up for learning. It also ties back to the structure of the cerebellum. The third part of the cerebellum, the flocculonodular lobe, “is reciprocally connected with the vestibular system” and has to do with “balance and posture maintenance [and] coordination of head and eye movements.”²³ This is important because all of these functions correspond with midline crossing activities. Blaydes comments that, “Locomotor movement crosses the brain and body’s midlines to integrate and organize brain hemispheres. When students perform cross lateral activities, blood flow is increased in all parts of the brain making it more alert and energized for learning.”¹⁸ It is clear, by looking at this research, that exercise and cognitive function are linked and that, by learning how the brain functions, teachers can gain a better understanding of how to foster learning.

Learning how students learn is a major factor in Blaydes’ teaching strategies. She comments that “in the past, the emphasis has been on how teachers teach. Now the emphasis seems to be how children learn.”¹⁸ Not only does Blaydes think this is important for teachers to know, but she also makes a point to teach her students about how their brains work. For example, “A child’s mental development is based in part on his/her early motor development. The brain begins to wire up its ability to process information by wiring up the body’s systems of balance, coordination, vestibular and motor movement.”¹⁸ Then, “As the brain and body begin to work

together to process motor sequences and patterns such as rolling over, crawling, walking and jumping, the brain creates the pathways used for processing sequences in reading and math.”¹⁸ By understanding this, teachers can utilize activities that help students develop motor skills to help them with mental development. Blaydes doesn’t try to keep this away from her students, either. Throughout her film, there are many examples of Blaydes explaining to her students why she has them doing the movements they are doing. The way Blaydes approaches school is revolutionary, yet it makes logical sense. She uses what she learns about the brain to shape her teaching style so that she can teach in the most effective way possible. The work that she is doing holds the potential for positive changes in the field, not just of physical education, but of education as a whole.

There is no doubt that in a nation such as the United States, where obesity numbers are growing, especially among children, that we must see change. USA Today reports, “In many schools, physical-education classes and recess have been squeezed out because of increasing educational demands and tough financial times. Since the passage of the No Child Left Behind Act in 2001, 44% of school administrators report cutting significant time from PE and recess so there's more time for subjects such as reading and math.”²⁴ That means that while obesity numbers keep increasing, physical education time keeps going down.

Luckily, there are schools that are ahead of the game and are already implementing more physical education in the school day. An Oregon reporter named Wendy Owen did some local research about schools that were ahead of the game and those that were not. She found that, “of the nearly 1,300 schools in Oregon, 52 met the 2017-18 requirement for elementary students and 47 met the middle school minutes for the entire school year. Of the nearly 1,300 schools in

Oregon, 52 met the 2017-18 requirement for elementary students and 47 met the middle school minutes for the entire school year.”²⁵

In Beaverton, Oregon, the Beaverton School district in 2014 decided to increase their physical education two to three more times than the previous year in elementary schools and make similar jumps in the middle schools in the area as well. However, with more education comes more teachers, and with more teachers comes more cost. In the elementary schools alone, the district would have to hire 66 teachers to meet these increases in physical education time. Additionally, teachers were not the only cost stress that would come out of this jump. Schools would also have to find more space to accommodate for more physical education classes. These are not little issues and all things must be considered in order to ensure best practice for teachers and students.

As it stands right now, Owen reports that, “Currently, Beaverton elementary students take physical education classes every three to six days, depending on the enrollment of the school. That equates to 45 to 90 minutes of exercise each week. In the 2017-18 school year, it jumps to 150 minutes each week or 30 minutes a day.”²⁵ This can make great strides in combating childhood obesity, as well as providing a well-rounded education.

However, people like Carl Mead, the superintendent of the Beaverton School District, are skeptical of the importance and success rate of implementing such a large portion of physical education. Mead says, “as much as we all want P.E., this is a huge shift of resources”²⁵ and he also commented about concerns of other subjects falling behind because of this shift. Mead is not alone in those concerns. USA Today interviewed “Mark Terry, president of the National Association of Elementary School Principals and principal at Eubanks Intermediate School in Southlake, Texas.” He says, “We all want healthy kids. It's a great goal, but a difficult one. You

have to look at the unintended consequences of things like this. They are well-meaning, and they are good for kids, but you have to alter the amount of time you have for other subjects.”²⁴ Mead’s thoughts are also focused on how to get physical education time in the classroom, rather than just P.E. class. Mead talked about trying to write legislation that allowed for recess to count in the goal number of hours needed. Most other states include recess in the hours of play but many still fall short of the minimal hours. There definitely is a push to get schools on track in terms of their physical education requirement hours and schools like Beaverton are on their way there.

Meanwhile, there are still schools out there that are not seeing the importance for this change, and there are schools that are not supported in making the change as well. According to a press article written by the Associated Press in 2005, in Nashville, Tennessee, there are such issues. Lisa Lewis, a health professor, heard that the high school (school was not named) her sons attended in Nashville had a reputation for having a bad P.E. class, so she went to check it out. P.E. unfortunately, as Lewis found out, is a subject that often has poor accountability. Teachers often have students play games and do not intervene when students stand on the sidelines instead of participating; a problem pointed out by Pangrazi above. However, the issue here is more that there are no expectations in P.E. classes like Lewis’ son’s class. Whether this is the reason or not, the Associated Press stated an alarming statistic, “Nearly one-fifth of all high school P.E. teachers don’t have a major and certification in physical education, according to the most recent numbers from the National Center for Education Statistics.”²⁶

The issue becomes that things vary state to state, and making a national benchmark only works if systems are in place to make sure it is being done. Another way to make sure that this is happening is by mandating P.E. teachers to be licensed in Physical Education. Superintendent Timothy J. McElheran of Victor Central School District just outside Rochester in Victor, N.Y.

said, “It’s no longer the coach with the whistle around his neck... Our physical education teachers are highly trained professionals.”²⁶ If all schools take on this mentality, then perhaps we will see physical education classes turn into true fitness learning opportunities that branch further than just sport games. Programs can look more like the nationally recognized program that Victor has which “includes rock-climbing, kayaking, cross-country skiing, archery and aerobic dance as options for students.”²⁶

Let us revisit the program at Naperville Central High School, a good example of the direction physical education programs should be headed. According to Sparking Life, founded by Ratey, “Naperville provides a powerful case study on how aerobic activity can transform not only the body but also the mind. It is a wonderful template for reshaping our society.”²⁷ This school district shifted the cultural push for sports to a focus on life fitness in the context of physical education. They stress that this education is not something these students do just at school, but should be something that manifests itself in all aspects of their life.. Naperville is promoting a healthy lifestyle. Naperville’s fitness change came from a middle school physical education teacher, Phil Lawler who was appalled at the statistics of health in children. He looked at their previous structure of physical education and saw that playing team sports during designated physical education time was creating a lot of standing and watching. In most team sports, there is much time spent standing and waiting for things to happen. Whereas now, when students are in P.E. their heart rate is constantly being raised, and they are getting cardiovascular exercise by running the mile once a week.

Although it is true that Lawler was not the first to think of having students run the mile, as many people remember running the mile in middle school, he did offer a new perspective for how to grade the mile. “One of Lawler’s favorite statistics was that less than 3 percent of adults

over the age of twenty- four stay in shape through playing team sports, and that this underscores the failings of traditional gym.”⁴ Even so, Lawler did not want students to lose the chance to learn about team sports, so he revamped how they were played. He made smaller teams to keep students constantly moving. This way, they are still getting to learn the sport and develop teamwork skills, while also maintaining a fitness model that keeps them moving. Lawler went on to take this New P.E. model to the senate to promote that all schools undergo this physical education reform, and he stressed the importance of fitness in relation to academic success.

Conclusion

History has shown us that, without a change in teaching practice, physical education is headed in a direction that could negatively impact future students. Experts in the field of physical education are working to identify what the problems are and how they should be addressed. John Medina has shown that a lack of physical activity can harm student learning and asserts that physical activity is necessary in the classroom. He states that “cutting off physical exercise - the very activity most likely to promote cognitive performance - to do better on a test score is like trying to gain weight by starving yourself. A smarter approach would be to insert more, not less, exercise into the daily curriculum.”³ John Ratey values physical education and its importance to student learning through his studies of schools who are currently implementing more physical education as well as how it relates to lifelong healthiness. Ratey comments that, “there are fifty-two million children, from kindergarten through twelfth grade, who attend public and private schools in the United States. If all of them had the benefit of Naperville-style physical education, our next generation of adults would be healthier, happier, and smarter.”⁴ Jean Blaydes takes what she knows to be true of the importance of physical education and puts it into practice. She “has developed kinesthetic teaching strategies that teach specific academic concepts in a teacher

friendly, time efficient, fun way that has proven results for a positive learning experience”¹⁸ and is dedicated to spreading these strategies to teachers all over the world. The research of Blaydes, Medina, and Ratey and the dedication that each of these experts have to encouraging physical activity among children should call to attention the importance of the issue. Children need to be moving, not just for their overall health, but for the health of their minds and their success in the classroom as well.

Pedagogies

McKenzie's Pedagogy:

Over the past four years, I have had the opportunity to pursue a degree in Elementary Education. During those four years, I have taken classes inside the field of education as well as many others. The classes that have struck me the most during my education are the classes that have educated me on movement and motivation. During my third year of schooling, I was taking a P.E. class, and when the class first started I thought, "Oh this will be fun, I will get to learn a bunch of fun games and activities to do with my students." While some of that was true, the thing I learned the most was that physical movement should not be limited to recess and gym day. Throughout the term, as I learned more about how crucial it is to get your students moving, the more invested I became. One week, we watched a video of a lady by the name of Jean Blades, who demonstrated how one can incorporate moving in the classroom without losing content time, and I fell in love with that way of teaching. From there, I decided to write my thesis on the importance of movement in the classroom not only because I wanted to educate myself and be the best teacher I could be, but also because I wanted to contribute to creating something that would inspire teachers like myself. By examining the evidence, I started to see the vast amount of research supporting more movement in the classroom. There is article after article showing not only the physical benefits, but the cognitive benefits of having more movement throughout the day. I started to realize there were only excuses, not valid arguments, against getting our students to move, and that is when I started to develop my own teaching pedagogy surrounding movement in the classroom. I am happy to say that, by writing this thesis, not only

did I gain a lot of information about the benefits of what physical education can do, but I will be able to apply what I have learned to my own teaching.

First off, I believe it is very important to work in a school community that shares the same interest and understanding of how essential it is to make movement for our students a priority. If you have a school setting that is invested in making this type of learning happen, it becomes a lot easier for the classroom teacher. Having extra support and like-minded people around you is what is going to make the difference. Ideally for me, I would be a part of a school community that had scheduled movement throughout the day, weekly movement activities, four recesses a day, a movement program and resources for students to use in the classroom. I know that not all schools have this down perfectly, but I would like to work at a school that values trying to obtain this level of activity, eventually. In my ideal school setting, the school would already have a school wide fitness program in place. This fitness program would not only include regular physical education classes, but it would also include before and after school programs. The before school program would be some sort of outside, or in a gym, movement activity that all students take part in before they came to school. This would be a great time for students to wake up, get their brains going, and run off some extra energy for those students who need it. The after school program would be something like having a jog-a-thon, running club or even a monthly movement event that is different every month. This could be run by staff members or even parent helpers.

However, even if I work at a school that does have a good program in the area of physical education, there are things that I will always do in my everyday teaching that will have my students moving as often as possible.

The first thing is that I believe it is very important to incorporate brains breaks throughout the day. In my ideal school setting, the school as a whole would have scheduled time for breaks during the day to allow students to move. Most likely I will not be working at a school that does this, but I will still make time to do these things in my own classroom. My goal as a future teacher is to have students do some sort of movement every 20 minutes. That would mean that my students would never sit more than 20 minutes before they had a brain break. These brain breaks can just be simple stretching times or relaxing yoga poses. They could also be very energetic activities that have students all over the room, involved in movement. In my experience, if these brain breaks are not previously scheduled, there is a tendency to forget to do them, especially when students are behaving. It is important to remember how much BETTER they could be focused if you had them move for a bit. Brain breaks are also a great tool to keep in mind when something is not going well. If students are having a hard time staying focused or are struggling with a concept, taking time for them to have a brain break can really help either get them back on track or give them a chance to have a different look at things.

In the four years of ~~my~~ getting my undergraduate degree, as well as the 12 years previous that I spent in the education setting, I can say that I completely agree with the statement: Teaching is an art not a science. Some teachers teach as if it were a science. Those are the classes that you cannot wait to get out of and dread going to. The teachers that teach as if it were an art are the ones who are constantly changing and creating their teaching into something that is beautiful. The thing that is interesting about art is that it isn't always appreciated by every person. Some people look at a painting and see life, feel different emotions, when others look at the same painting and see yellow and blue. In the same way not all teaching can be appreciated in one way, and often it takes time and reflection from the viewer to really see the art come alive.

In teaching, sometimes it isn't until we look back on our previous teachers do we see their teaching as valuable. When looking at teaching as an art, it brings oneself to look at the whole picture. I believe a good teacher is capable of teaching every subject in one lesson. I like to think of it as a complete way of teaching. This way of teaching is extremely time consuming and very hard at times, but this idea of a complete teaching method is exactly what I want to aim for as a teacher. Within that one lesson, you should accomplish many things, including movement. When I am planning a lesson, within each lesson I always create parts of the lesson that include students getting up out of their seats and doing activities that have them moving and engaged. I have found that if my students are up and moving during the lesson, they tend to be much more successful, and they also tend to enjoy their time more. While there are times that are appropriate to have students do worksheets, the less time they are sitting and learning the better, in my opinion. Good teaching involves good lesson plans and good lesson plans involve getting the students moving.

There are many ways to get students moving, and there are also a lot of tools to do so. For example, my ideal classroom would have alternative seating. I would either have a classroom set of exercise balls as chairs or stationary bikes. I like the idea of balls because they are cheaper and do not need to be maintained, however the bikes would be cool for the potential of creating your own energy, and are a little more intense of a workout. If I did not have the opportunity to get these types of alternative seating, I would look into bounce lines, which are rubber bands that go on the bottom of chairs and serve as something students can move their feet on while not making any noise. I also think it is important to set up your classroom as a tool. To do this successfully, I would arrange my classroom so that, for every subject we go over, the student would need to get up and move. During these transition times, I would have students do different

movements to move to the next station. For example, “please hop on over to math”. I would also use different places around the room for collection and distribution locations. ~~So~~I would not pass out papers to my students, I would make them collect them from different areas around the room. This arrangement would work better for older students.

These strategies and movement plans are some that I have already implemented in my own classroom, and they are also some that I will try and do in my future years of teaching. Through all my research and practicing in my own classroom, I know that we have a generation of students that need to move more than any generation before, and if we keep them sitting in a chair all day, they are going to lose their learning ability. I also know that, by looking at the rate of obesity in the United States, we need to do something different. I think that starts with education in two ways. The first is that we need to make sure we do all we can to get our students moving, and the second is that we need to educate our students on why physical activity is so important and also educate them on some ways that they can be active even into adulthood. My goal as a future teacher is to do both of these things in my classroom, and continue to talk to people about why it is so important that we do these things for our students.

Ashley's Pedagogy:

It is my strong, personal opinion that students need movement in the classroom. Physical activity holds a vast amount of benefits both physical and emotional, and, when incorporated into the classroom, its benefits reach even further to impact student learning. A teacher's job is to set their students up for academic success. I firmly believe that physical activity is a key component to doing this effectively. When students are active, it allows their brains to process information more efficiently, essentially making it easier for them to learn, and to retain what they have learned, because the information is more clearly marked in their brain. As you can see through the literature review, there is a large amount of research being done that is looking at the science of the brain and how we can most efficiently utilize physical activity. What I am certain of, is that teachers should be using physical activity in the classroom as much as possible, because it promotes physical and emotional wellbeing as well as academic success. Below is my personal pedagogy about using physical activity in the classroom. It is broken down into sections based on how and when I feel it should be used.

Building a healthy lifestyle starts early.

Students at the primary level spend around half of their waking hours at school. Because of this, I believe that the habits students build during the school day are often habits that they will carry with them into adulthood. If students build sedentary habits in school, and sitting in a chair all day becomes their norm, it is not surprising that this is the lifestyle they will lean towards when choosing a career. Many Americans sit at a desk all day at work and then come home and sit on the couch all evening. It may seem outrageous to suggest that this tendency begins in elementary school, but I am convinced that there is a connection between childhood

routines and adult tendencies. This is why movement in the classroom is so important, because it helps students build habits early on that will benefit them throughout their entire life.

When is a good time?

Movement in the classroom should be used often throughout the school day. When implemented correctly, it can make the daily routine run more smoothly because students will be more engaged. I believe movement should be implemented in the following ways:

-When kids start to fidget: Students should never be asked to sit in one place longer than fifteen minutes. At fifteen minutes, students will generally start to fidget or lose focus. Their mental stamina is running low, and they need something to draw their attention back in, or they will detach from the lesson. This is a perfect time for a brain break, a stretch break, or a transition. Something as simple as having students stand up and do a few jumping jacks before sitting back down will work, but it is important that students do not remain sedentary for too long.

-Transitions: Fifteen minutes may not be long enough for a lesson in the upper grade levels, so older students may benefit more from brain breaks, but for younger students, transitions can serve as strategic times to implement movement. When students begin to fidget and lose focus, it is a good time to wrap up the lesson or activity and refocus students by getting them out of their seats and participating in a task that gets their blood moving; if this refocuses the students, great. If not, it might be better to revisit the rest of the lesson later and move on to something new for now.

-Modeling: Students serve as great manipulatives when modeling a concept. Use them to help demonstrate story problems, to act out events, anything to include students in the modeling

process. By actually acting things out, students are much more likely to remember something than they are if they are told the same information. As an added bonus, the students not serving as your models will think it is entertaining and will pay more attention as well.

During a lesson

There are many ways to implement movement into a lesson. Some strategies that I think are beneficial have been listed in the strategies section of this thesis, but I would like to highlight some that I find particularly important. The first is that teachers should utilize hand, or body, motions to help students learn concepts and vocabulary words, and they should use those motions often. I believe that, as much as is possible, student responses should include movement because, not only does it help keep them engaged, but it allows students to process information on a deeper level because they are activating more areas of their brain with their response. Another strategy I would like to highlight is giving students opportunities to respond physically when a verbal response is not appropriate. Sign language can be used here, or other, made-up hand signals, but the point is that students are able to actively engage in a lesson without disrupting the teaching by speaking. This is important because it allows students to feel like they are a part of the discussion because they get to share their opinions and have their voices heard. Something as simple as a nod often works to acknowledge a student's hand signal, and yet, even though it is simple, it provides students with an outlet to interject in an appropriate way. This strategy is also beneficial because students can have a signal for 'yes', 'no', and 'I agree', and it can allow them to share their opinion of a topic or read aloud without raising their hand or using words. Students can also have signals for things like, 'May I use the restroom?' or 'May I get a

drink of water?', and it can allow them to get up and leave quietly, take care of what they need, and return without causing the teacher to stop the lesson.

One more strategy I find incredibly important, is to take brain breaks throughout a lesson as necessary. A list of sample brain breaks is listed in the Teacher Resources section of this thesis. As I mentioned above, students should not be asked to sit still longer than 15 minutes. It is easy, as a teacher, to want to get through a lesson or push through for just a couple more minutes, but the reality is that if students aren't in a mental state that allows them to learn, they won't learn. If sitting still on the rug becomes too much for a student to handle, but they will get in trouble if they squirm, it may take all of that student's attention just to keep their body still. If this is where their attention is going, listening to their teacher's words is almost certainly too much to ask. I believe that instruction time is much more effective if it only occurs when students are ready to learn. If students need to take a brain break, I feel it is more important that they stop and move their bodies rather than pushing through, because it will allow a student's work time to be much more productive and meaningful.

Never a punishment.

Physical activity should not be used as a punishment for students. Physical activity and staying active are wonderful things that hold a plethora of both physical and emotional benefits. Because of this, I believe teachers should work to foster a love of staying active, not a dread. When teachers use physical activity as a punishment, it creates for students a negative association with being active.

Don't take away recess. Ever.

Something I have seen done often, is that if a student is not behaving because they are playing or messing around, not following directions, or acting out and displaying challenging behaviors, the teacher will respond by taking away part or all of the student's recess time. "You owe me 5 minutes of recess" is not an uncommon phrase. Every time I hear this, though, it makes me cringe. Students will often act out because they have been sitting for too long and they no longer have the capacity to sit still and devote their attention to the task at hand. By taking away a student's privilege to go out and play at recess, teachers are setting the student up for failure because students often need that free time to refocus their minds and get their blood flowing again. If students do not get the chance to take a break like this, any challenging behaviors they might be displaying will likely only intensify. If it becomes absolutely necessary to not allow a student to go to recess, they should be provided with another means of physical activity so that they are still getting the benefits of being active.

Final Thoughts.

As adults, it can be difficult to remember what it was like to be a child. Adults have developed focus and attention skills that children do not have yet. I believe that the picture perfect classroom where all of the students are sitting quietly at their desks is not the ideal classroom. It may be possible to get all students to sit quietly, but for some students, that comes at the expense of their learning. I believe that children learn through doing, and that the more children can move around throughout the school day, the better. This does not mean that there should be a lack of structure, but it means that the teacher should be able to recognize when their students are restless and know what to do to help students refocus. It is my personal belief that

physical activity is the factor that will refocus students if implemented correctly, and for this reason, I feel it should be viewed seriously as a crucial part of the classroom each and every day.

Teacher Resources

Brain Breaks

Sort it Out

1-5 mins

Description: The idea of this activity is to have everyone stand up and organize themselves into groups of some sort. For example, one idea would be to have students stay in one big group and order themselves from tallest to shortest. Another would be to have two groups where boys go to one side of the class and girls to the other. Students could also divide themselves up based on their favorite color creating any number of groups. Below are some more ideas to shout out. This activity can easily fit wherever you need it to, you simply do as many group commands as you need or want to make the activity take as much or as little time as is necessary.

- > Tallest to shortest
- > Shirt color, eye color, hair color, etc.
- > Long sleeves vs. short sleeves
- > What you like more, fruits vs. veggies
- > Favorite color, breakfast cereal, sport, musical instrument, etc.
- > Anything else you can think of!

Extensions: This activity can be used at any grade level because you can choose the level of complexity. Older grades may enjoy sorting themselves in more challenging ways and be able to do more complex actions whereas the younger grades may need to stick with simple observations to sort themselves and be given action commands that are easy to follow.

Memory

3-5 mins

Description: Students can each have a little memory game that they pull out for brain breaks. They will get out their cards and find some personal space in the classroom (sitting, standing, laying, it doesn't matter as long as it is not their desk). They can set up their memory deck and play one time (or until the teacher says to return to their seat).

NOTE: Try and encourage students to cross their midline during this activity. This means having students be directly in front of their cards and use their dominant hand to pick up the cards. They should need to cross their body to reach some of the cards.

Extensions: This activity can be specialized by unit because the memory cards can reflect the current topic. Either they could be relevant pictures for younger students, or they could be words and their definitions for older students. This game can also be played by students individually or they can partner up into pairs or groups.

Don't be Nosy

1-2 mins

Description: Have students touch their nose with one hand and then use their other hand to touch the ear on the opposite side of their head. Then have them switch. Try having them switch repeatedly at a consistent pace, then let them try it as fast as they can and see who can switch the fastest.

Extension: One way to modify this activity to make it relevant to learning could be to have students switch in correlation with letters or numbers. For example, they could switch once for each letter while they recite the alphabet or spell a new word. They can also switch once for each number while practicing counting by increments (2's, 5's, 10's, etc.)

Charades

3-5 mins

Charades is a great game that can go quickly or take time depending on what is needed. One person acts something out while others try to guess what it is that is being acted. This game can be played as a class or with partners. As a class it can be teacher led or student led or students can take turns leading in pairs. Either way, the leader can act out one thing and the class or the guesser has to figure out what it is that the leader is acting out.

Extension: This activity can easily be aligned with a content unit by choosing an action or thing that relates to the unit. For example, during a lesson about frogs, the leader can act out different stages in the life cycle of a frog.

Follow the Leader

3-5 mins

Student or teacher led, this activity is fun and gets kids moving. For a set amount of time, the 'leader' leads the rest of the class around the room. To add movement, the leader can choose a type of motion (skipping, crawling, hopping, etc.) that the rest of the group has to copy. Students can also break into small groups so that there are multiple leaders leading at a time.

Extension: This activity can be modified to relate to content by turning it into a 'field trip'. For example, if students are learning about the rainforest, the teacher can lead students around the room, moving as different animals that live in the rainforest would move, while pointing out imaginary landmarks the students would see if they were actually there. If the weather permits, this activity can also be done outside.

Yoga

1-5 mins

Student or teacher led, yoga sequences can help refocus kids who are getting distracted. This activity can be done a number of ways:

- As a whole class. The teacher can have students stand at their seat and follow along as the teacher (or a student who comes to the front of the class) guides students through a yoga sequence. If it is difficult to do a whole sequence, a jar of popsicle sticks labeled with individual yoga poses can be used. The teacher can draw a few sticks and do the poses listed on the sticks.
- As small groups. If students are grouped into table groups, one student from each group can come draw a few sticks from the jar and then lead their table group in the poses they drew.

Extension: To make this activity relevant to content,

Dance Break

1-5 mins

Turn on some tunes and have students get their wiggles out by dancing. This is a fun way to get students' blood pumping again when they are getting tired. It can also be done in a variety of ways:

- Freestyle. Students can dance however they would like for a song or for a set amount of time if there isn't time to listen to a whole song.
- Dance routine. The teacher can lead students in a specific dance routine. This can be a good way to go because it can incorporate dance moves that cross the midline.

Extension: This activity break can easily be made relevant to content by choosing an educational song. Youtube has many options to choose from.

Pass the Pencil

1-3 mins

Students stand up and hold their pencil in one hand. They lightly toss their pencil up in the air so that it flips, and they try and catch it. As students master this, they can try to do the following:

- Catch the pencil with their other hand
- Hold a pencil in each hand and toss both at the same time, catching them with the same hand that tossed it.
- Hold a pencil in each hand, toss both at the same time so that they cross, and catch each pencil with the opposite hand that tossed it.

Up and Down

1-2 mins

This activity is a quick one that is meant to get students' brains back in gear if they are feeling sluggish. Have students stand at their desks and put their hands out in front of them with their palms facing away from their body. Have them move just their right hand side to side. Then have them move just their left hand up and down. Next have students try and do both motions at the same time.

To continue this activity, have students switch hand directions so that their left hand is moving side to side and their right hand is moving up and down. Switching directions while moving is even more challenging.

Extension: If students have mastered this trick, have them come up with other creative movements. For example, if a student wiggles their toes on their right foot while wiggling their fingers on their left hand, or lifts their left knee while pumping their right fist into the air.

Head, Shoulders, Knees, and Toes

1-2 mins

Teacher leads the students in the song Head, Shoulders, Knees, and Toes. This gets students on their feet and moving as well as thinking. The tempo and volume of the song can be adjusted so to keep students' attention. Also, this can easily be student led by having one or two students stand at the front of the class to model for the rest of the students.

Stretch To The Stars

1-5 mins

Description: You will have the students stand up where they are and have them do simple stretching. This brain break can be molded to fill transition time and it can also always be the same or always be different. This can be student lead or by the teacher. Have the students touch their toes, elbows, waist, twist their bodies, lean to one side and then the other and reach for the stars. Taking this and adapting it to fit what you want or how much movement the students need makes this most successful.

Note: Stretches that encourage and engage students to cross their midline are great for development and getting their brains going.

Extensions: For younger grades you could start with one or two stretches and add a new stretch every week. You could also introduce counting into some of the stretches and once the teacher has modeled the technique of stretching and counting you can let the students count on their own. You could also have them sing their abc's or for older students same their vocabulary from the unit they are working on.

Chair Exercising

2-8 minutes

Description: The students sit on the edge of their chairs or desks while keeping their back straight. Play music and have them do different actions. Hiking: Students swing their arms and reach left and right while tapping their toes and lifting their knees(similar to marching while sitting). Swimming: Students move their arms as if doing the front or back crawl and kick their legs in a flutter kick. You can also have them fake dive to different sides. Cycling: Students hold on to the seat of their chairs and pedal their legs as if riding a bike. Paddling: Students use an imaginary paddle to paddle a canoe (both sides).

Note: Try to do movements that also cross the midline to encourage further brain use.

Extensions: If students are learning to sports or activities in Physical education then incorporate those into this break brain. You can also teach about being healthy through this brain break. Let students know there are many forms of exercise and talk about how all are important and how we need to have healthy lifestyles.

Thumb Index Mash

1-5 mins

Description: This is a brain break that could be hard for some students so doing it in steps would be best especially for younger students. First have them put two thumbs up and their hands in fists(first picture). Then switch to both index fingers out and hands still in fists. Have them keep switching between the two different finger positions. Then have them try one index finger out and one thumb up. Then make them switch, start slow and have them try to go as fast as they can go switching between both.

Extensions: Have them switch and do the same exercise with different fingers.

Spell Your Name With Your Body

5-10 mins

Depending on the grade you might just start them out trying to move their body to draw the first letter of their name. Then eventually have them spell their own name. First, spell your own name or first letter with your body to demonstrate how to move their bodies. You can have them do this as a full group everyone spelling at the same time, in pairs spelling to each other or have them come the to front of the class and do it in front. Once they get their first name's have them do both their first and their last name.

Extensions: In different units you can have them spell their vocabulary words from the unit out with their bodies. You can also teach them how to spell the vocab words by moving your body to the word.

Criss-Cross Fingers

5-7 mins

Have students hold arms out in front of themselves, cross the arms over each other then grab the other hand and cross the fingers. Then bring crossed fingers to chest near your chin. Instruct students to move different fingers to match what you are doing.

Extension: You could also turn this into a pair activity and have students pair up and instruct each other what finger to move.

Thumb Jets

2-5 mins

Have the students hold both thumbs up at eye level. Have them move their thumbs up and down while tracking with their eyes with the movement. For young grades you can have students write different numbers and letters while doing this. It can be great for when you are teaching a new letter or number. Show them how to write it and then have them get out their “thumb jets” and write it again in the air. For older students you can use this to do vocabulary words or have them spell their names as something to get their minds thinking.

Extensions: You can use this as a transition or attention getter. Tell the students to get “their thumb jets ready because we are moving on to something else” and have them spell what is next.

I spy

5-8 mins

Ask the children to stand up and move away from their chairs or things that will distract them. Explain that when you say, “I spy” every child needs to stop what he or she is doing and ask “what do you spy”. Then the teacher should say something like “I spy children dancing in one place” or “I spy a rock star playing a silent guitar”. Instruct the students to act out whatever it is that you say after “I Spy”. Once you say “I spy” again students should stop and listen for the next instruction by saying “What do you spy” A good closing line for this activity is to end with “I spy students sitting quietly in their chairs” then they are already for what you might be doing next.

Extension: Have students self lead this activity. You can also do themes for the type of year or season or you can also do things that match the unit you are in. For example if you are studying the life cycle of a pumpkin then you would say “ I spy a pumpkin growing large and wide”

Simon Says

5-10 Mins

Stand in the front of the room and give the commands for Simon says. You could also substitute “Simon” for “Ms.Insert Name” Says. Give them commands to move certain parts of their bodies and explain that they only move if you say “Simon says”. So for example if you say “Simon says hands on your hips” everyone should have hands on hips, but if you say “run in place” next everyone should still have their hands on their hips. You can play that if they mess up that they sit down until last man standing. However, if you see that students are getting sad or frustrated you can still have them moving while they are out. So if they get it wrong they do five jumping jacks and then go back to playing.

Extension: Students love to lead this just have a system in place to switch leaders. Have students on two minute rotations or something that ensures all students get a chance.

I Can Do This Pose

1-2 mins

Have students stand up for one minute making themselves as big as they can “saying I can do this” then have them stretch out their arms like they just won a race and say “I will do this”. This actually builds confidence as well as gets the students up for a brief moment.

Extensions: You can tailor this to fit every lesson so at the beginning of each lesson you say “I can (insert lesson adaption). For example if you are practicing multiplying with fives, at the beginning of the lesson you have the whole class stand up and say “I can multiply by fives” while in the power pose.

Follow the Model

2-3 mins

Have the students get up and gather in a group or stand next to their chairs. Hold up a monkey, or baby doll, or something that resembles a human like body. Tell your students that they are to follow everything that the model is doing and make sure to name your model or have your students do so. Then you move the model around doing different kinds of movements. Ex: Patting its head, rubbing its belly, jumping, wiggling its bottom. Whatever strange move you can get the model to do have your students follow.

Extension: This can often get the students really riled up so at the end sometimes having the model stretch and doing calm motions helps to end the activity. You could also use the model as a talking object during instruction or use it to show steps of directions.

Strategies

No Chair Day

What to do: One day a week or for one hour each school day, designate time when students stand at their desks instead of sitting. This could also be used during an important unit or a new unit to help keep kids from zoning out and missing crucial information.

How come? Standing encourages more blood flow than sitting, which can help students pay better attention because they won't feel as tired or drowsy. By having students stand, especially during important instruction times, it can help them better engage in learning so that they have a better chance at retaining the information they take in.

Intervals

What to do: Set a 10-15 minute timer during periods of individual work time or quiet reading time. When the timer goes off, have students stand up and shake out their muscles, then return to their work.

How come? If kids try to focus on one thing for too long, their brains can start to feel fatigued and it can become difficult for them to focus. By regularly interrupting their focus and giving them a chance to get their blood flowing again, this strategy allows students to maintain better focus for longer periods of time.

TPR (Total Physical Response)

What to do: When teaching students new vocabulary words, assign a hand gesture to go with the word. Make sure to use that hand gesture every time you use that word, also having students gesture when they hear the word, until they have learned it. Whenever possible, have students help come up with the gesture they would like to assign a new word.

How come? Adding a physical expression of a word causes students to devote an extra level of attention to what it is that they are learning. When learning something new, our brain creates new pathways and connections. The more we repeat it, the more solidly we can remember it. TPR helps by reinforcing these new pathways in the brain.

Hand Signals

What to do: While teaching, get students to interact physically by setting up a system of hand gestures. For example, have different signs for 'I agree', 'I already know this', 'I am confused', 'That is interesting', etc.

How Come? This way while you are talking, students are still engaged and interacting even though they aren't talking.

Hooray for Movement!

What to do: Make physical activity a reward, not a punishment. An example of this might be to allow the five best behaved people to go to recess early, or to allow students to go to the yoga center once they have finished their work.

How come? The more positive correlation students get with being active, the more it will become a habit for them to live active lifestyle. Developing these habits at a young age will help improve their overall health throughout their lives.

Wiggle While you Work

What to do: Allow students to wiggle. Not every student can listen sitting criss cross applesauce. If a student is not being disruptive, let them sit comfortably, fidget, or stand if they need to. The other students will not complain if this standard is set early on.

How come? If a student is uncomfortable, they will have a very difficult time listening to anything you have to say. By allowing students to move how they need to in order to focus, within reason, it allows them to take responsibility for themselves and figure out what they need to be successful.

Move to next activity with motion

What to do: Instead of just walking to places you have students-skipping, or leap frog, jump, etc. This activity works great with center work and when stations are set up around the room. You could also have them do this as a transition into the next activity(from the carpet please jump frog to your seat and get ready for math.

How come? This helps students be less distracted in transitions because they are focused on the movement rather than stopping and talking to their friends.

Who Needs Chairs?

What to do: Use exercise balls instead of chairs.

How come? Sitting still in a chair can be difficult for some students. By having them sit on an exercise ball, it allows them to engage their core and continue to be moving while they sit. This may help them focus more easily.

I Need a Break!

What to do: Have a wiggle dance and allow students to request it if they feel they need it. If it is a bad time to take a break, tell them you can't stop at the moment, but that you hear their request for a break and will get to it as soon as you can. Maybe allow them to stand up and listen if they need to until it is an appropriate time to do the wiggle dance. If the wiggle dance allows for words, you can customize it to whatever you are teaching at that moment so that it doesn't interrupt learning.

How come? If getting up and taking a wiggle break is an option that students know they have, they will learn to recognize when they need it and will ask for it. This allows them to take ownership of their learning and will help them to self-manage their behavior.

Think-Pair-Share-Move

What to do: When you first do this with your students make sure that you do a demonstration and explain the expectations of the activity. Make sure to talk about the way in which students are moving(ex: not all in the same direction, no running, eyes up watching for others) First students walk around alone by themselves thinking about the question, then they find a buddy and walk around sharing both person A and person B thoughts. Then they share out to the whole class.

How come? It is often hard for students to sit and think quietly in their seats. This is a great way for students to be able to think and move at the same time. Partner walking can be little louder but it also makes it to where it is harder for students to just listen to the pair next to them and you get the same answer five times from five different groups.

Be an Active Teacher

What to do: Be active in your teaching. Always be up and moving, expressing enthusiasm for learning. Express to the students that you need brain breaks as well. Demonstrate what it looks like to be actively engaged in learning.

How come? Teachers can't sit at a desk and expect their students to be active. Students follow the example that is given to them. If their teacher is sluggish, they will mirror that. If their teacher is excited and ready to teach, students will be excited and ready to learn.

Clear the Desks

What to do: Have students keep all of their supplies at a designated place in the classroom, not at their tables. Allow them to get up and get materials as needed.

How come? By not having the supplies at their desks, students will have to get up and walk to their supplies whenever they need something. While this may seem tedious, it provides them with a mini brain break every time they get up to get something.

Take a Nature or Observation Walk

What to do: These could be long or short. You could take them outside down a nature path or just simply a walk around the school. Make sure they are noticing what they are passing like: the trees and plants. If there is a park nearby have take a walk to it. You can also do a walk inside and have them walk around the room and have them make observations about what they see. You could follow this up with a writing assignment. This can also be a really good time to have them reflect on other students work by doing gallery walk.

How Come? This is a great way to get students either moving around the room or even better outside while also learning at the same time. This movement can be a great time for students to be reflective.

March in place

What to do: Do the ABC's while marching, Count by 2 or other memory activities that might be lesson specific while marching. You can also use this for spelling and have the students spell out the words by marching. This activity can be done anywhere and is great for waiting in lines for certain things.

How come? This activity requires no prep work and can be done anywhere. It is a fun way to get repetition in for students in areas that they might be struggling and it also requires them to be moving at the same time.

Four Corners

What to do: They walk/hop/skip/etc. to whatever corner fits with them the most. Agree/Disagree or somewhat agree/ somewhat disagree based on content questions you ask them or this would also be to for ethical questions if in a middle school or high school setting. If you want to have this pre-setup you have can letters ABCD in the corners or words that cue which corner to go to and then just read the statement and give answers based on letters then have the students move to answer. You can also lead discussions this way calling on a spokesperson from each letter or corner to explain the group's thinking.

How come? This can be a great formative assessment because students will tend to move in packs so you will know what the general consensus of the class is. It is also a great way for shy students to be able to move and answer without having to be called on. This is also a great way to get students to actually participate in discussions because they feel they must defend their group's answers.

Spelling With a Ball

What to do: Have student stand up and stand next to their chairs or around the room in a circle and have them spell out a word by passing the ball around. So it starts with one student who says the first letter then they throw it to the next who says the next letter of the word, and so on. You can also do a related word brainstorm where you pick a topic and the students say a word that relates to that topic.

How come? This activity allows students to work together and also helps students who might not know the whole word but when it is broken up letter by letter it can help them with spelling.

Fact or Crap

What to do: The teacher reads statements that are either fact or crap. If they are facts the students jump with their hands up towards the sky, if it's crap we squat down like you are going to the bathroom. You can modify these movements if students become bored or if they need more movement. Make sure when doing this activity that you clarify that it is ok to be right or wrong.

How come? This allows students to look around and verify what the correct answer is and it helps them develop quick thinking skills.

Grammar

What to do: Have students turn punctuation and grammar into sounds and motions. When certain grammatical features come up in an exercise, groups act out their sound and motion instead of just saying something like, "A comma goes there." Along with this it would be good to have a picture of the punctuation and then the motion that goes with it somewhere in the classroom so students can have a place of reference.

How come? For example, if you always clap a period at the end of a sentence then when students are writing on their own and they come to the end they have muscle memory of what they should do.

Literacy

What to do: Give small groups of students small plastic bags and ask them to put or create objects that represent characters they've recently read about. So, they can could gather objects around the room or use their bodies to show things about the character(ex: if the person has brown hair the brown hair boy would point to his head as one clue). Then pass the bags around the room or do a share out of the motions and each group must look at the objects and guess which character the other groups are trying to depict. This would be done for a book that the class is reading together.

Use technology that gets the kids moving

What to do: There are many videos that get kids up and moving about certain subjects. Go noodle is an excellent site to just get your students up and moving with different songs. There are also different books or short stories that have motions that go with the story.

How come? Building muscle memory during learning is great and this is also just using technology in your classroom as a strategy to get students moving whatever that may look like in the lesson you are doing.

School Resources

Ideal Fit Plan for Elementary Schools:

Each day starts with Team time in the gym with everyone. The physical education teacher will lead the entire school in stretching and activities to get the kids moving and their brains ready to learn. This could be as easy as playing simple songs and just dancing around with students or this could be a time for classes to do physical activities with their peers and teachers. This should be around 15-20 minutes total. If this takes too much away from seat time, propose to have the school day start 15 minutes earlier to make sure there is adequate time for all subjects.

Throughout the day there are brain breaks structured. So at 9:30am, 11am and 1:15pm the entire school should take time to have a brain break. This can be changed based on the teacher's ideal schedule for the class but there should be at least three on tops of recess time/outside time. The teachers would be required to do at least three a day and if the school is very dedicated to the cause they would be all at certain times. (This could be hard to do depending on how complicated the schedules of the school are)

Every class has yoga balls for chairs as an option and there are grants available for alternative seating like this. There should also be stand up desk available to all teachers and students that they can use at anytime during the day that they do not want to sit. A school set of exercise bikes that each class can sign up to have in their room for a week or month. Set a fixed schedule with what classroom has them what week to avoid conflict.

There is recess in the morning, lunch, and afternoon these should be at least 15 minutes long with one being 30 minutes. Along with this, teachers would not be able to withhold recess time from classes for bad behaviors, recess would always be required but what they were allowed to do at recess could be restricted.

PE does not include just games and sports (at least three times a week). There should be at least one, if not two, full time Physical educators that provide each class with P.E. three times a week. They should develop curriculum that incorporates lifelong exercising activities. Possible use of the Pangrazi or Jean Blaydes materials. Within P.E. there should also be connections to education about health. This would perhaps help with those schools who have not been teaching health due to lack of time. There would be integration of both P.E. and health.

There should also be a school run that happens weekly on Fridays. Students are encouraged to do laps and each lap card can earn them entry into a monthly prize drawing that a parent club would be in charge of. Then as an end of the year event and fundraiser have the school put on a jog-a-thon. Part of the proceeds would go to whatever the school wanted to fundraise for and a small portion would go to get supplies and prizes for the next year's jog club.

Friday Morning Runs:

Supplies for Friday: Cards with 10 punch spaces, hole punches, popsicle sticks, a table, chair, signs, card holder, at least two volunteers depending on the number of students.

Supplies for the month/year: Record keeping binder, funds for parties and monthly drawing gifts.

Rules:

1. Every lap students get a popsicle stick.
2. After ten laps students give a hole punch
3. After ten hole punches they turn their card in for a drawing at the end month.
4. The winner of the drawing gets a small type of prize (pencil, eraser, etc.)
5. After ten hole punches they also get a talley on their record for the year.
6. The class with the most laps by the end of the year gets a fitness party with fun movement activities (dance dance revolution).
7. The student with the most laps by the end of the year gets a new pair of running shoes.

Punch Card Example:



Calling ALL Parent Volunteers!!!!



Have you heard of our awesome Friday Fun Run? If you have not you are missing out! Our school has the opportunity to be able to offer a perfect outlet for your child's extra energy. Every Friday, we meet (insert location) before school at (insert time). Your child(s) has the option to run or walk around the track(or gym weather depending) before school. Students run around the track and receive popsicle sticks for every lap they do and then when they collect(insert how laps for one mile, depending on "track size") sticks they get a hole punch on their card that is a record for how many miles they earn. The class that has most miles by the end of the year wins a Dance-Dance(or other) party and the student who has the most miles overall, wins a new pair of running shoes. We also do monthly drawings from the full punch cards entered each month, for small prizes. If you have previously volunteered for Friday Fun Run we thank you and hope you join us again! If you have not volunteered before but are interested here are some of the things that we need help with....

Ways to help:

-running one Friday Fun Run a month(set-up, tear down, punching cards and passing sticks, handing out water, etc.)

-helping collect small monthly prizes

-keeping data on all the students that participate using a record sheet

-helping organize the end of year celebration for the first place class

***If you are a runner or walker and just want to come support the kids as they run around, we hope that you will join us every Friday or at least the ones you can make it to!**

For more information stop by the office or email (insert person in charge).

Suggested schoolwide program: Run Through the Country

The following pages offer samples that can be utilized to implement this program.

Samples include:

- Parent Handout
- Informational Flyer
- Sample Log Sheet
- Brochure



Run Through the Country

Join the Challenge!

Dear parents/guardians,

Here at [school name], we are *joining the challenge* to *Run Through the Country!* Run Through the Country is a school wide fitness program that aims to encourage students and their families, as well as teachers and other community members, to be more active. Research shows that students who are more active are better able to focus on their work, are better at making connections in learning, and have higher self-esteem and confidence levels. By participating in this program, you can help encourage your student to be more active which will help them develop healthy habits that will improve their lives both inside and outside the classroom.

The goal of this program is to work together as a community to start walking, biking, roller blading, anything to get moving, and to keep track of how many miles have been traveled. These miles will be totaled and displayed in the main lobby of our school so that students and parents can watch our progress as the miles increase. By ??/??/??, the goal is to have logged enough miles that, with that distance, we could travel across the country and back. It is estimated that it takes a grand total of 20,000 miles to travel through every state in America, including Hawaii and Alaska, so we have made 20,000 miles out goal.

20,000 miles is a lofty goal, but with the help of you and your family, we are confident that we can reach our goal. If we are able to reach our goal by the set deadline of ??/??/??, our students will earn a field day to celebrate the steps we have taken toward building healthy habits. Parents will be welcomed to join in at this even since you will be helping support your students.

We hope you will participate and help us reach our goal. The challenge begins on Monday!

Thank you,
[principal signature]

Run Through the Country

Join the Challenge!

20,000 MILES

Can we do it?

In order for us to make it through the country and back, we have to log a total of 20,000 miles. That's a lot! We will need all the help we can get, so invite your family and friends to do it with you.

"A lifetime of exercise results in a sometimes astonishing elevation in cognitive performance, compared with those who are sedentary."

-John Medina, Brain Rules

The Challenge will begin

??/??/??

and we have until

??/??/??

HOW TO PARTICIPATE?

Packets can be found in the main office. It is never too late to join the challenge. Come talk to us today to get your log sheet and start tracking those miles!

Log Sheet

Date	Miles Logged	Parent Signature
Total miles logged:		

Run Through the Country! Can your school do it?

When students, faculty, and families work together to reach a goal, it brings the whole community together. This program challenges schools to take on the goal of tracking enough mileage as a community to travel across every state.

This program can be shared with all the schools in a district so that schools can challenge each other.

The more people involved, the bigger the impact on the community.

Running, walking, even biking, it doesn't matter. Let's get moving!

School Name
Street Address
City, ST ZIP Code

School Name
Street Address
City, ST ZIP Code

Join the challenge!

The goal is to get schools across America to join the challenge to *Run through the Country* and make an impact in how our schools and communities stay healthy and fit.





Make It Yours

You know your school the best, so you can set the parameters.

Included are suggestions for how to put on this program, but of course some changes could be made to fit specific needs.

What We Suggest...

We have estimated a grand total of 20,000 miles to travel through every state, including Hawaii and Alaska.

This is clearly a high bar to set, so we recommend a conversion of each mile logged to five miles on the map. This puts the actual mileage goal at 4,000 miles. In an elementary school with six grades taught with an average of three classes per grade, that would be around 225 miles per classroom. That is doable, especially if the program lasts a while.

"A lifetime of exercise results in a sometimes astonishing elevation in cognitive performance, compared with those who are sedentary."

-John Medina, Brain Rules

Research shows that students who are more active are better able to focus on their work, are better at making connections in learning, and have higher self-esteem and confidence levels. By implementing a program like this one, students will be encouraged to be more active which will help them develop healthy habits that will improve their lives both inside and outside the classroom.

How do you do it?

Simple. If you are interested in joining the challenge, just email us and we will send you a starter packet that includes sample flyers and posters to advertise and explain the challenge. Other than that, all you need are some good shoes and someone to walk with!

Want more information?

This program is inspired by research done on how exercise influences the brain and what this means in the field of education. If you would like to read what we found, let us know and we will gladly share it with you.

Who are we?

Our names are Ashley Templeton and McKenzie Stepper. We are graduates of the Education Program at Western Oregon University. We both have a passion for fitness and would love to help your school join the movement to build healthy lifestyles among our schools and communities.

[picture of us]

Contact Us

School Name
Street Address
City, ST ZIP Code
Telephone
Email
Website

Reflection of Project

Over the course of this project, we have spent a year and a half doing research, applying principles, reflecting on professional practice, and implementing new techniques all in the realm of physical activity and everything that encompasses. Through the process of writing our literature review, we have had our eyes opened to the vast amount of research and evidence supporting that physical activity holds incredible benefits to the human body, both physically and mentally. There is so much, in fact, that to us it seems ludicrous that there is not more being done to implement this research into the education system. Through our thesis, we each gained a better understanding for the science behind the theories, and were able to see why physical activity is so important in the classroom. There is such a direct correlation between movement and successful learning that, to us, it simply makes sense to use movement as a tool to support learning.

Because of this, our desire has become to use physical activity in the classroom as much as possible, and to share what we have learned with other teachers. We hope that, in doing so, we will start to see a change in the education system that will benefit all students in a multitude of ways, and will help them to grow to become healthy adults that can keep this cycle of movement going. Because of where our country is at, in regards to overall health, a movement towards physical activity could not be more necessary. The programs we have created are a direct result of our desire to contribute to this much needed shift. It is our hope that, by other educators reading our thesis, they too will see the importance of an increase in physical activity levels in education, and will, as a result of our suggestions, not be afraid to implement programs like ours in their respective schools. This project has allowed us to grow as educators and become strong

advocates for physical activity in our teacher candidacy, and we hope to carry this vision for an active classroom into our professional careers.

References

1. Boyce, B. Ann. "Physical Education-Overview, Preparation of Teachers." Web.
2. Pangrazi, R. P. (2007). *Dynamic Physical Education for Elementary School Children*. Glenview, IL: Pearson Education. (pp. 1-724)
3. Medina, John. *Brain Rules: 12 Principles for Surviving and Thriving at Work, Home, and School*. Seattle, WA: Pear, 2008. Print.
4. Ratey, John J., MD. *Spark: The Revolutionary New Science of Exercise and the Brain*. New York: Little, Brown and Company, 2008. Print.
5. Yasa, Michael A. (2016). "Hippocampus" *Encyclopaedia Britannica*. Web.
6. Lisman, John; Jonas, Peter. (2014) "Structure, function, and plasticity of hippocampal dentate gyrus microcircuits. Web.
7. Sibley, Benjamin A., and Jennifer L. Etnier. "The Relationship Between Physical Activity in Children: A Meta-Analysis." *Pediatric Exercise Science*. Human Kinetics Publishers, Inc., 2003. Web.
8. Centers for Disease Control and Prevention (2013). *Obesity – United States, 1999-2010*. Web. 25 Nov. 2015.
9. Coe, Dawn Podulka, Pivarnik, James M., Womack, Christopher J., Reeves, Matthew J., and Malina, Robers M. (2006). *Effects of Physical Education and Activity Levels on Academic Achievement in Children*. Web. 10 Oct. 2015.
10. Rochman, Bonnie (2011, December 07). "Childhood Obesity: Most U.S. Schools Don't Require P.E. Class or Recess." Web.
11. Great School Staff (2015). "What Does the School Board Do?" Web.
12. Rado, Diane (2016). "Many schools skipping some PE classes, despite the law" Web.
13. Croll, Jillian. "Body Image and Adolescents." *Chapter 13*. Web.
14. Spellings, Margaret. (2005). "10 Facts about K-12 Education Funding" *US Department of Education*. Web.
15. Common Core State Standards Initiative "Frequently asked Questions" Web.
16. Sonstroem, Robert J. "Exercise and Self Esteem." N.p., n.d. Web.
17. Cloud, John (2009). "Why Kids' Exercise Matters Less Than We Think." *TIME*. Web.
18. Blaydes, Jean (2009). "Action Based Learning, Building Better Brains Through Movement." *Jean Blaydes Madigan*. Web.
19. Blaydes, Jean. "Action Based Learning." Film.
20. Schmahmann, Jeremy (2008). "Cognition, Emotion and the Cerebellum". Web.
21. Budde, Henning; Voelcker-Rehage, Claudia; Pietrasyk- Kendziorra, Sascha; Ribeiro, Pedro; Tidow; Gunter (2008). "Budde Study Cerebellum connected to PFC" *Action Based Learning*. Web.
22. Welniak, Sara; Smith, Heather "Crossing Midline: The Imaginary Line Between Right and Left" *Pediatric Therapy Center*. Web.
23. Patestas, Maria A.; Gartner, Leslie P. (2016). "A Textbook of Neuroanatomy" *John Wiley and sons, NJ*. Print.
24. Hellmich, N. (2013, May 23). Report: More PE, activity programs needed in schools. Retrieved from <http://www.usatoday.com/story/news/2013/05/23/physical-education-schools/2351763/>
25. Oregonian/OregonLive, W. O. (2014). Physical education requirements will be costly, Beaverton School Board learns. Web.
26. Associated Press (2005). Web
27. "Sparking life." *Fitness & Academics*. (n.d.). Web
28. ASU Teacher of the Month--Robert Pangrazi. (n.d.). Web