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The Importance of Physical Education to a Students Health and Academics

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Abstract

This research explained that physical education was essential to a student's academic health. State policies were reviewed regarding appropriate types of physical education, and school requirements, and limitations. Two major research programs provided evidence to support increasing and or improving physical education opportunities for students. The benefits of physical education for k-12 students included in this study are: improve strength and endurance, reduce stress and anxiety, increase healthy bones, help manage weight and control eating habits, and increase self-esteem, and cognitivism.

Keywords: Physical education, physical activity, health and benefits, students

The Importance of Physical Education to a Students Health and Academics

As a student in high school I saw a lack of physical education throughout those four years. The school district I resided in only required students two years of physical education in those four years in order for them to graduate. This lack of physical education peaked my interest and eventually prompted this research. Physical education has many benefits to a student. The benefits that physical activity can provide it is undoubtedly one of the most essential parts of a student's academic health. This brings up the primary question of this research, why is being physically active important to a student's academic health? The secondary questions include: how is physical activity defined in physical education classes? What are the consequences of a student being inactive? What benefits does being physically active have for students' ability to engage in learning? Should Physical Education be treated as an elective or a core subject for graduation.

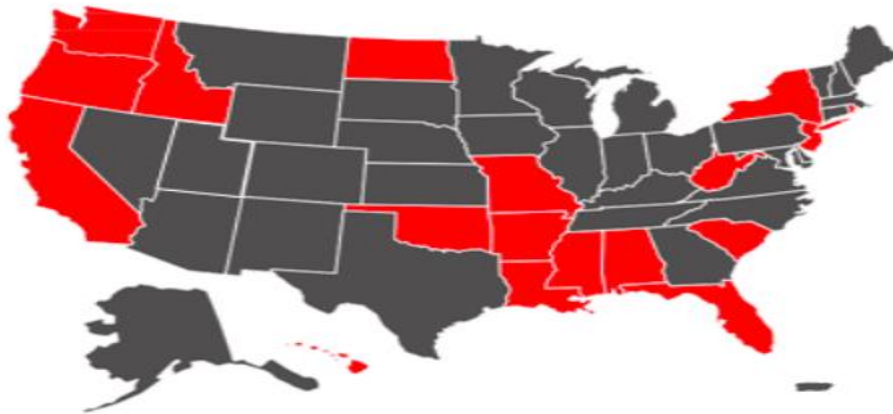
Background

When thinking about a student's academics, district educators are mainly concerned about two subjects reading and mathematics, but one important subject overlooked is physical education. Students are exposed to many negative risks that can have a long lasting impact on their lives. By ignoring the importance of physical education and not being physically active students are at a higher risk for serious health problems. Serious health risks such as obesity and type two diabetes are both commonly found in adult populations, but typically not in teens. At least that's how it was in the past. Today students are diagnosed with many health problems, including diabetes, blood pressure and heart disease, because of the lack of physical activity. Not only does physical activity help students lead a healthier lifestyle it can also be traced to a student's success in the classroom. Physical education may not be graded heavily or considered

beneficial towards academics, but research shows that students experience a boost in academic scores by having some physical activity in their curriculum. Without policies in place to implement daily physical activity students are indirectly affecting academic benefits.

Physical education has noticeably decreased since the No Child Left Behind Act of 2002 was put in place. This act affected the time spent on physical education and increased time spent in classes, reading, writing, and doing mathematics primarily to increase test scores on standardized tests. This was thought by many academics to be a good idea. Rick Pappas from Wichita State University who states, “It’s a common misconception that keeping children in the classroom will boost test scores and maintain focus on studying, but no research supports this idea” (Whitehouse & Sahfer, 2017). The below figure shows that 18 states in the United States require students to participate in PE in elementary schools.

STATES HAS A PHYSICAL EDUCATION TIME REQUIREMENT FOR ELEMENTARY STUDENTS



The NPAA found that only 21.6% of children between the ages of 6-19 in the United States reach this goal (National Physical Activity Plan, 2018). While also finding that only 5.1% of teens between 16 and 19 reach this goal. Meaning that three fourths of the United States students are not getting nearly enough physical activity in their daily lives. Everyone from their

early childhood to late adolescence, should be involved in some type of physical activity for at least 60 minutes a day (CDC, 2019). The absence of state policies that require some type of physical activity in schools could be a sign of correlation to the decrease in physical activity throughout the country.

What are the consequences of a student being inactive? The Center of Disease Control recorded an increase of kids and teens with heart disease, obesity, type two diabetes, and even cancers due to physical inactiveness. While health problems in students are rising there is still a decline in physical activity that continues to grow. Active Education Research (2015) found that “One in three kids in the United States is overweight or obese” and the CDC (2019) states that “Four of five high school students do not get enough physical activity.” Mary L. Gavin, M.D (2013) states that “Daily PE classes that get kids moving and health classes that explain how to choose nutritious foods and appropriate portion sizes can help kids make healthier choices.” This can also lead to the decrease in health problems while also providing benefits such as better sleep, cognitive ability, along with bone and musculoskeletal health. A major cognitive benefit that physical activity has to offer is distressing and clearing the mind. While doing this physical activity also presents the opportunity to exercise social skills with their peers (Better Health Channel, 2018). With the combination of physical activity and its benefits it may lead students to creating a better atmosphere for everyone.

Literature Review

Some people, even teachers, may believe that spending too much time in physical education may have a negative effect on a student's academics. When trying to analyze how being physically active can benefit a student's academic success we can turn to the research. The Better Health Channel (2018) states that, “Almost immediately after engaging in physical

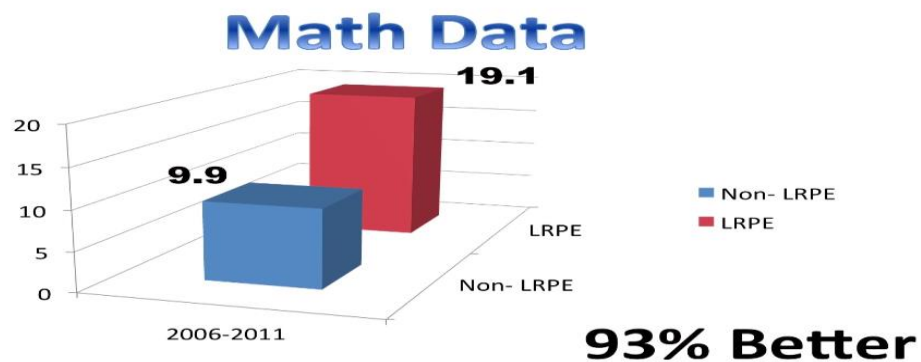
activity, children are better able to concentrate on classroom tasks, which can enhance learning.”

With students being able to concentrate more, teachers have the opportunity to engage students in their learning. One of the following researches will show what an efficient physical education class can produce and the other will be looking more into the cognitive abilities that improve with physical activity.

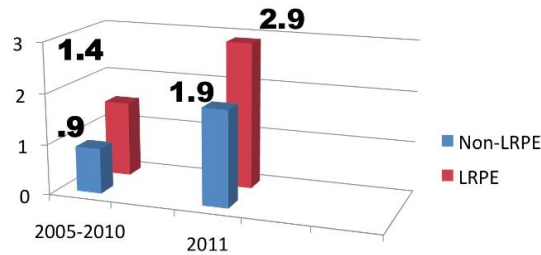
Educator Paul Zientarski who has been a physical education teacher for 40 years at Central High School in Naperville, Illinois. Zientarski quotes Havard researcher, Doctor John Ratey, “It is exercise that builds brain cells not new learning” (Learning Readiness PE, 2013). Ratey was referring to the brain growing new cells in the hippocampus. Active Learning Research stated that, “Physically fit children have a larger hippocampal volume and basal ganglia. Both of these brain structures have been associated with learning in children” (Active Learning Research, 2015). Zientarski started a program called Learning Readiness Physical Education (LRPE). The purpose of this program was to get the students involved in different physical activities efficiently in order for them to boost their academics (Learning Readiness PE, 2013). This went against the traditional path of physical education which mainly consisted of students playing sports, for example football, as being adequate physically active. Physical activity is defined by the World Health Organization (2018) as, “Any bodily movement produced by skeletal muscles that requires energy expenditure,” what does this mean? It means that physical activity can be any activity done while doing chores around the house, working, or even walking. LRPE redefines physical activity in a physical education class. Zientarski (2013) states that:

Physical education is more than a few baseball bats and basketballs. You need to arm physical education teachers with the proper technology, like heart rate monitors and software to track their students' fitness.

This definition explains that sport activities were technically getting students physically active, but many of them were not reaching the target heart rate to benefit from physical education. Their target heart rate depends on each student's individual condition and includes a student's gender, height, and weight. The heart monitors helped to keep track of each student's progress and efforts. Zientarski's class consisted of physical activity that got their heart rate up with exercises such as rope obstacles, rock climbing, kayaking, and other strategized activities. This program was implemented into students' class schedules by inserting it prior to them attending the subject in which they struggled the most. This was purposely done, because through the years of 2005 and 2011 students who participated in the program after the class performed lower than those who participated in the program before class. The following charts show the reading and math scores of these participating students who had LRPE before or after math.



Academic Reading Data



52-56% Better

Active Living Research found similar research at the elementary school level as well. In a portion of their research they found that fourth grade students who walked for twenty minutes had better scores on tests compared to the students who were sitting prior to the same test. They also found that physical activity helps a student's memorization. They found this by testing students in memorization games and those who participated in physical activity did better than those who did not. When it comes to studying memorization can increase a student's chances of learning in any subject. Active Learning Research (2015) stated the following:

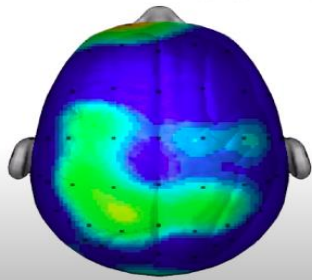
Physically fit children demonstrate memory and efficiency of the brain through two learning strategies: relational memory, which involves remembering objects by using a cue, such as turn left after you pass the school, and working memory, which involves moving information from the short- to long-term memory. This is important because children use relationships, such as understanding that “three groups of three” and “three times three” are both math facts with the same answer, to remember and recall information.

The success of physical education helping students academics can be traced to the amount of brain activity found when a student attends class after participating in physical activity. The Active Learning Research found that students' brains showed more neural activity

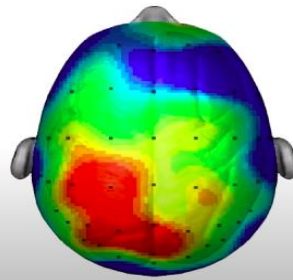
after performing physical activity than those who did not participate. Activities with higher intensity have shown to improve academic performance even further (Active Learning Research, 2015). They conducted another study where they gathered a group of students to participate in an afterschool program called FITKids and waitlisted another group of students. The students were involved in about 70 minutes of physical activity every weekday for nine months. After those nine months they scanned the brains of those active and the waitlisted students who were inactive. The results showed a huge difference in neural activity and how physical education has a long lasting impact on a students brain. The students who were active showed an increase in brain activity while those who were inactive saw a decrease in brain activity. As the Active Learning Research (2015) concluded their research they stated, “Making physical education the centerpiece of the school day may improve physical health and, in turn, maximize a child’s potential to be academically successful.”

Average composite of 20 student brains taking the same test

Brains after sitting quietly



Brains after 20 minute walk



Methodology

The research I found for this paper was through the CSUMB library database and google. Some of the keywords I used were the importance of physical education, physical activity, and students' health related to physical activity. I primarily tried to use sources that gave research from their organization or evidence and facts such as the CDC. These sources were able to back

up their findings with some type of evidence through graphs, scans, or test scores. While looking at sources I took into who was presenting the information as well. Paul Zientarski is considered an expert in this topic, because he was in the field of physical education for over 40 years. Zientarski also founded the Learning Readiness Physical Education program at Central High School. Other programs that are dedicated to research of this topic such as the Active Learning program I found as valid research.

When using keywords such as teachers + physical education it took me down a route of information that was not as useful. The types of articles I found with those keywords were about budget cuts in the physical education department and PE teachers across the country who have lost their jobs. While this is unfortunate it did not help my research or explain that physical activity is important to a student's academic health. I also ran across websites that posted graphs of different researchers, but they did not provide how the research was conducted.

Results

As I finished my research on the importance of physical education to a student's health and academics I gathered my findings in order to answer my primary and secondary questions. Starting with my primary question of the research, why is being physically active important to a student's academic health?

Research from both Active Learning Research and LRPE have both provided evidence that students gain benefits from physical activity that help students perform better in academics. The Active Learning Research program research found that students who had engaged in physical activity prior to class had more brain activity during class. These students showed increased ability in memorization and concentration. Zientarski's LRPE program showed the

results of students involved in an efficient physical education class. Students in the LRPE program showed improvements in reading and mathematical scores.

How is physical activity defined in physical education classes?

The definition of physical activity can be summed up as any bodily movement that requires energy output. The definition of physical activity in physical education means more than just any movement. It means targeting a heart rate, so that the students can obtain the benefits of physical activity in their physical education class. Whether that be rock climbing, kayaking, or any other activity targeted to get students engaged in PE.

What are the consequences of a student being inactive?

Some of the consequences that a student may face without proper physical education can be serious, because it deals with their health. From the NPAA 2018 progress report it shows that only five percent of teens ranging from the ages of 16-19 reach the 60 minutes of physical activity the CDC recommends. This is resulting in the increase of the youth being diagnosed with obesity, type two diabetes, and can even be linked to various cancers.

What benefits does being physically active have for students' ability to engage in learning?

There are many factors that go into preparing a student to engage in learning. Physical education can address many of these factors starting with the health aspect, physical activity offers better sleep and cognitive benefits. Distressing and clearing the mind of worries is one of the cognitive benefits gained through physical activity. The most beneficial cognitive benefit is that the brain grows new cells in the hippocampus translating to students' increased ability to concentrate and memorize more material.

Conclusion

Students who are regularly involved in daily physical education are not only able to lead healthy lives, but also see an increase in their academics. After considering the academic and health benefits, the importance of physical education is undoubtedly an essential part of a students curriculum. Instead of a lack in state policies regarding physical education we need to implement some to ensure students can maximize their academic potential. The combination of new policies and efficient physical education classes such as LRPE can increase the chances of students leading a life filled with increased learning abilities and health. There are many questions about physical education that remain unanswered for now, but with the current evidence provided by the research done it is justified to say there needs to be an increase of physical education throughout schools.

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