

Will CrossFit Make American Kids Smarter?

Studies already show that PE classes help academics.
A new one finds that daily CrossFit Kids workouts significantly raised test scores

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Fact 1: America is falling behind the rest of the world in the classroom. A 2003 study conducted by UNICEF ranked the U.S. 18th out of 24 nations in terms of the relative effectiveness of its educational system. Only 20 years ago, we ranked number one.

Fact 2: To remedy the situation, classroom time devoted to math and language arts—and to rigorous testing of these subjects—has increased, and the time has mostly come out of exercise. A study (Dollman, Boshoff & Dodd, 2006) found that daily PE exists nationwide at only 8% of elementary schools, 6.4% of middle schools and 5.8% of high schools. It found that some educational leaders see time spent on regular PE as “disadvantaging children in regard to ‘core’ academic areas,” and that Illinois is the only state that mandates PE every day for every student, although 25% of its school districts have been allowed to relax the PE requirement.

Fact 3: The U.S. is experiencing an unprecedented epidemic of childhood obesity, which has increased 35% in the past 10 years. Today's students now run the risk of becoming the first generation of Americans to have a shorter life expectancy than that of their parents, due to obesity-related heart disease and diabetes (Olshansky, Passaro, & Hershov, 2005). Carrying excess weight for years can lead to high cholesterol, high blood pressure, heart disease, stroke and premature death. We are also now witnessing, for the first time, a substantial number of children with Type 2 diabetes, a condition that normally develops in adults.

Question: Is there a casual relationship between these three facts? Could it be that the alarming declines in student health AND academic performance are both due to the lack of physical education? And, on the flip side, could restoring physical education to schools help restore America's standing in the classroom?

Answer: Yes.

A number of studies have documented the link between children's activity level and academic performance. These studies support one another in suggesting that when a substantial amount of school time is dedicated to physical activity, academic performance meets, and may even exceed, that of students not receiving additional physical activity (Shepard, 1997).

The relatively recent field of neuroscience also provides researchers with a great deal of insight into the physiological impact that exercise has on the brain. Human and animal studies show areas involved in movement and learning are intimately connected, and physical activity could increase those neural connections (Jensen, 1998; Shepard, 1997). Learning complex movement sequences stimulates the prefrontal cortex used in learning. Animal studies indicate that exercising rats have more neural connections, nourished by more capillaries, than sedentary rats (Jensen, 1998). Furthermore, researchers are now certain that voluntary exercise can increase levels of brain-derived neurotrophic factor (BDNF), stimulate neurogenesis, increase resistance to brain insult, and improve learning and mental performance (Cotman & Berchtold, 2002). Additionally, physical activity might alter arousal through neurohormonal mechanisms, which could improve the child's attention in the classroom (Shepard, 1997). Despite the tremendous amount of research in this area, those in the field of Nutrition and Fitness are continuously trying to convince policy makers that there is value in what they provide students.



CrossFit As A Solution

As a second-grade teacher, as well as a 2 ½ year member of Crossfit SoCal, I firmly believe that those in the field of education have a social responsibility to encourage students to eat healthy and exercise. Providing children with more opportunities to exercise will help them fight obesity, grow up to be healthy adults and quite possibly, perform better academically in school. That is precisely why I made the decision to conduct my Masters research thesis on the impact that fitness might have on my class of 20 second-grade students. The purpose of my research was to determine whether or not an increase in cognitive function was observed in elementary-aged school children as a result of consistent rigorous physical activity. In preparing for my research I concluded that the critical component was, in addition to exposing my students to exercise, keeping their heart rates elevated for an extended period of time. One of the major problems with most PE programs as they are implemented in our schools today is that students are failing to achieve this target heart rate. For this reason, I decided to implement the fitness program known as CrossFit Kids.

Those familiar with CrossFit Kids know that it is a strength and conditioning program for many young athletes and the primary PE program for many home schools and charter schools. It is used by athletic teams, martial arts schools and many parents that want their kids to grow up healthy, strong, and with a life-long love of working out, thus avoiding the common problems associated with childhood inactivity and obesity. The program delivers a fitness that is, by design, broad, general and inclusive. By participating in this program, students were required to take part in different daily workouts that incorporated a variety of activities such as running, push-ups, pull-ups, box jumps, thrusters, squats and much more, all with the



goal of maintaining an elevated heart rate for an extended period of time (ideally more than twenty minutes). The CrossFit Kids program (www.crossfitkids.com) is designed for universal scalability, making it the perfect application for any child, regardless of experience.

The treatment group in this study consisted of twenty second-grade students from King Chavez Primary Academy (KCPA). KCPA is a three-year-old Charter school in the Stockton/Barrio Logan area of San Diego. The composition of the treatment group was 13 boys and 7 girls. 90% of the participants in the treatment group were English Language Learners. 5% of those same participants had an Individualized Education Plan (IEP), meaning they fell under the umbrella of special education. 100% of the students were living below the poverty line. The variable in this research project was the implementation of the fitness program known as CrossFit Kids. Students participated in a variety of workouts for at least 30 minutes every day of the week, while other classes received 50 minutes of PE every six weeks.

What did the results show?

Recently released California state standardized test results showed that 100% of the students in the treatment group scored proficient or advanced in mathematics. This was an achievement that, to date, had never been accomplished in mathematics at that school. This score was up 15% from the previous year, in which 85% scored proficient or advanced in mathematics. In English Language Arts, 36% of the students scored proficient or advanced, a 12% rise from the previous year. This enormous increase in achievement in the core subjects was accomplished despite the fact that students were out of the classroom and away from direct instruction for 30 minutes a day in

order to take part in the CrossFit Kids workout of the day. The previously cited argument that participation in daily fitness classes takes away from academic performance was simply not observed in this research project. The fact that the treatment group was able to out-perform every other group of students in the school in the area of mathematics may even provide indirect evidence of a causal relationship between exercise and cognition.

Additionally, at the end of the program, students were given attitude surveys regarding their experience in the program, as well as their feelings towards exercising at school. These surveys demonstrated a strong desire for the program to continue, and revealed how the students believed CrossFit Kids impacted not only their health, but their academics as well. In examining the results of the survey, I found that 65% of the participants reported that their favorite activity at school was physical education. 47% of the participants reported that the main reason they exercised was because it made them feel healthier, while 47% said it made them feel smarter. Not one participant indicated that they exercised simply because they were made to do so. 100% of the participants said they would like to continue CrossFit Kids the following year. 100% of the participants reported that they have changed the types of food they snack on as a result of participating in this project.

It is my strong belief that these participants have not only increased their awareness of their own health, but that their overall confidence in themselves in both fitness and academics has changed as well. I observed the participants' desire to push themselves harder and harder each week, both physically and mentally. Participants who were initially timid with some of the exercises were later participating with both confidence and ease and were eager to demonstrate their progress. I witnessed a change in their social interactions as well. The participants had a sense of teamwork that initiated in the fitness program but later extended into the academic setting of the classroom. They were supportive and encouraging of one another and this led to a decrease in the aggressive behavior that was observed at the start of the school year. Overall, the program had a tremendously positive effect on the entire classroom dynamic.

As an educator, I know that I have a responsibility to prepare my students for the 21st century in the areas of reading, writing and math. But, when we as a society are faced with such a grave health epidemic in our nation's youth, I believe educational institutions have a responsibility to teach life-long lessons regarding health and wellness as well. I sincerely hope that my research and the research of others will inspire educators to take action on this critical issue.



About The Author

Lisa Bakshi has been teaching 2nd grade in San Diego after earning her Master's at San Diego State University. She began training at CrossFit SoCal about three years ago under the instruction of Krista and Ahmik Jones and implemented bits and pieces of CrossFit with her students immediately afterwards. She got her Level 1 CrossFit Certification during her second year of teaching and wrote a grant to buy enough equipment to run a full CrossFit Kids program, which is now in its third year. She recently began an after-school CrossFit Kids club for kids of all ages. Married last summer, she is currently expecting her first child and has continued CrossFitting through pregnancy.

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