Learning is a Moving Experience

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Figure 1 2004 CST in English-language arts by the number of fitness standards achieved

- Blue line: Grade 5
- Green line: Grade 7
- Red line: Grade 9

CST ELA Scale Score vs. Overall PFT Score
Figure 2 shows these same results using 2004 CST in mathematics scale scores.
What were the findings in the State of Texas?

2.4 Million Students tested

Most telling tests for Academic Success

Cardiovascular Fitness

Body Composition
Researchers at West Virginia University evaluated the fitness levels and standardized academic test scores of 725 Grade 5 students in Wood County, West Virginia, and re-examined the results two years later when the children were in Grade 7.
The study found that performance dipped when the students' fitness declined and increased when fitness improved. Children with the highest average standardized test scores, which included reading, math, science and social studies, were the ones deemed fit at the start and end of the study.
9 and 10 year olds students

Easy Condition

Higher Fit

Lower Fit

Hard Condition

Slide Compliments of Dr. Chuck Hillman University of Illinois
"Consistent exercise, and certain types of specific exercises, can both temporarily and permanently affect the way your brain is able to focus, its ability to deal with stress and anxiety, and its ability to learn ... "Exercise is like fertilizer for the brain ... it’s so good, it’s like Miracle Gro".

- Dr. John Ratey, Harvard Brain Researcher
BDNF is a neurotrophin whose status as a regulator of the survival, growth & differentiation of neurons during development has matured to include the adult nervous system.

BDNF functions to translate activity into synaptic & cognitive plasticity in the adult animal.
Neurotransmitters

Neurons are specialized cells in the brain that receive and transmit messages through biochemicals called neurotransmitters.

Neurotransmitters cross gaps, or synapses, between neurons, and attach to receptors. Drugs can alter mood or behavior by blocking these receptors.
Average composite of 20 student brains taking the same test

Brains after sitting quietly  Brains after 20 minute walk

Research/scan compliments of Dr. Chuck Hillman University of Illinois
How have we put the Brain Research into action?
Literacy/Reading Data

- Non-LRPE
- LRPE
- LRPE 2
MATH DATA

Bar chart showing math data for non-LRPE and LRPE from 2006 to 2009.

Year | non-LRPE | LRPE
--- | --- | ---
2006 | 3.9 | 20.4
2007 | 5.9 | 10.1
2008 | 14.4 | 18.3
2009 | | 21.2

Legend:
- non-LRPE
- LRPE
What does L.R.P.E. Look Like?

Based on Fitness
Cardiovascular Intensity
Cross Lateral Activities
Core Strength
Team Building
Balance and Gymnastics
Traditional Team Sports
MOVE and LEARN

Improve Student Engagement
Help Motivate Students
Activate all parts of their brain

Learning Readiness PE
was PBS. Click play to watch.

Questions about LRPE Contact
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Big Ideas for PCFSN

• Support quality daily PE in all States
• Make PE a “CORE” Subject
• Support the continuation of the PEP Grant
• Adopt a recognized nation-wide Fitness Test
• Encourage a paradigm shift from sports-skills activities to life-long fitness understanding as a standard
• Colleges of education should change the emphasis of physical education teacher preparation.