

THE IMPORTANCE OF PHYSICAL EDUCATION AND ITS STRONG EFFECT ON STUDENTS' ACADEMIC PERFORMANCE

Dr. Anil Ramrao Kamlapure

Director of Physical Education and Sports, Nivrutti Babaji Navale College of Commerce and Science College, Lonavala, Dist. Pune, Maharashtra, India.

Paper Received On: 25 JULY 2022

Peer Reviewed On: 31 AUGUST 2022

Published On: 01 SEPTEMBER 2022

Abstract

This research paper investigates the critical relationship between physical education, physical fitness, and academic performance among school children in India. Conducted as a descriptive study with a sample of 500 students from diverse schools in Pune, the research employs both primary data (through questionnaires, fitness tests, and interviews) and secondary data from global and Indian studies. The analysis, performed using SPSS software and statistical methods such as ANOVA and correlation tests, reveals a strong positive association between physical fitness and academic achievement. Key findings indicate that students with higher fitness levels demonstrate significantly better cognitive functions, including improved concentration, memory, and language skills. For instance, physically fit children scored on average 20% higher in Mathematics and Science compared to their less-fit peers. The study also highlights the immediate benefits of physical activity, showing that even short activity breaks can enhance classroom engagement and learning outcomes by up to 15%. Furthermore, the research identifies significant gaps in the current Indian educational ecosystem, such as inadequate infrastructure, shortage of trained physical education teachers, and parental misconceptions regarding the role of sports in academic development. Based on the evidence, the paper proposes actionable recommendations, including mandating daily physical education, integrating fitness into academic grading, and promoting a whole-school approach to physical activity. The study concludes that physical education is not merely recreational but a fundamental component of holistic education that directly enhances academic performance, mental well-being, and long-term health. It calls for systemic reforms to prioritize physical education within the national curriculum to foster healthier, smarter, and more successful future generations.

Keywords: Physical Education, Academic Performance, Cognitive Development, Fitness, School Health, Indian Education System, Statistical Analysis, SPSS.

1. Introduction

A. The Indian Student's Dilemma – Marks vs. Health

In today's India, from big cities like Delhi and Mumbai to small towns, the pressure on students is immense. The dream of becoming a doctor, engineer, or IAS officer starts from Class 1 itself.

Parents say, “Beta, padh lo, varna life barbaad ho jayegi” (Study, or your life will be ruined). In this race, the health of the child is often the first casualty.

Look at these shocking numbers:

- A 2021 study by the Indian Council of Medical Research (ICMR) found that nearly 15% of Indian school children are either overweight or obese. This number has doubled in the last 10 years.
- Another report by WHO in 2021 stated that over 80% of Indian adolescents are not getting the recommended 60 minutes of daily physical activity.

Our ancient wisdom told us, “*Sharir madhyam khalu dharma sadhanam*” – the body is the medium for achieving everything in life. But today, our schools treat the Physical Education (PT) period as a *free period*. It is cancelled for extra maths class, for exam preparation, or because the PT teacher is on leave.

B. What Earlier Research Tells Us: A Global and Indian Perspective

The author studied over 50 research papers before starting his own survey. Here are the most important findings, with data:

a. The Childhood Habit Crisis

A global study in the Journal of Pediatrics (2019) tracked children for 15 years. It found that only 30% of children who were inactive in school continued any form of exercise as adults. In contrast, over 75% of children who played regularly in school maintained an active lifestyle later. This shows that school habits decide adult health.

b. The Attitude Problem in Indian Schools

A 2017 survey by **Sports Authority of India (SAI)** in 2000 schools across 5 states revealed that:

- **62% of students** saw PT as a "break period" rather than an important subject.
- **55% of girls** in government schools felt shy or lacked proper uniforms/sports gear to participate.
- **70% of parents** interviewed said they would prefer an extra tuition class over a sports period for their child.

c. The Stress Epidemic

A 2020 study published in **The Lancet** focused on Indian college students. It found:

- **1 in 3 students** showed symptoms of anxiety and depression.
- Out of these, **over 60%** reported doing **less than 30 minutes of physical activity per week**.

- The study concluded that regular physical activity could reduce student stress levels by **up to 40%**.

d. The “Non-Sporty” Child is Being Left Behind

Data from NCERT’s **National Achievement Survey (2018)** showed a worrying trend:

- In schools with active daily sports, the average academic score was **12% higher** than in schools with no structured PT.
- Yet, **only 37% of schools** in India had the mandated infrastructure for physical education.

3. Objectives of This Study

This research aimed to achieve three clear, measurable goals:

1. **To quantify the importance** of physical education for Indian school children using primary data from Pune.
2. **To statistically prove** the correlation between physical fitness levels and academic scores in subjects like Maths, Science, and Languages.
3. **To create a practical, implementable model** for integrating quality physical education into the Indian school curriculum, regardless of budget or space constraints.

4. Research Methodology

This was a descriptive and analytical study conducted with scientific rigor.

a. Sample Design:

- **Total Sample:** 500 students
- **Breakdown:** 250 boys, 250 girls (to ensure gender balance)
- **Classes:** VI to X (Ages 11-16)
- **School Types:**
 - 200 from Government Schools
 - 200 from Private CBSE/ICSE Schools
 - 100 from Low-Budget Private Schools

b. Data Collection Tools:

1. **Fitness Test Metrics:** We didn’t just ask students. We measured:
 - **BMI (Body Mass Index):** To categorize underweight, normal, overweight.
 - **Shuttle Run (Beep Test):** To measure cardiovascular endurance.
 - **Sit-and-Reach Test:** To measure flexibility.
 - **Push-up/Sit-up Test:** To measure muscular strength.
2. **Academic Performance Data:** With school permission, we collected the previous year’s final marks in:

- Mathematics
- Science
- First Language (English/Marathi)
- Overall Percentage

c. Psychological Questionnaire: A simple survey to gauge:

- a. Concentration levels in class (on a scale of 1-10)
- b. Frequency of feeling tired or sleepy in afternoon classes
- c. Enjoyment level of school

d. Statistical Analysis:

All data was fed into **SPSS Software (Version 25)**.

- We used **Pearson's Correlation Coefficient** to find the strength of the relationship between fitness scores and academic marks.
- **T-Test** was used to compare the average marks of the "High Fitness" group vs. the "Low Fitness" group.
- **Regression Analysis** was used to predict how much academic performance could improve with a unit increase in physical activity.

5. Key Findings with Statistical Evidence

The results were clear, statistically significant, and eye-opening.

Finding 1: The Fitness-Score Direct Correlation

- There was a **strong positive correlation ($r = +0.68$)** between overall fitness score and overall academic percentage.
- **Translation:** Students who were fitter consistently scored higher marks. This was not a coincidence; the data showed a direct link.

Table 1.1 Statistical Data :

Fitness Category	Avg. Maths Score (/100)	Avg. Science Score (/100)	Avg. Overall %
High Fitness	78.5	81.2	82.1%
Medium Fitness	68.3	70.1	71.5%
Low Fitness	58.9	60.5	61.8%

*The difference of over **20 percentage points** between high and low fitness groups is statistically significant ($p\text{-value} < 0.01$).*

Finding 2: Cardiovascular Fitness Boosts Brain Processing

Students who performed well in the Shuttle Run (Beep Test) – indicating good stamina – scored 25% higher in language-based tasks requiring quick thinking and error detection. In a specific grammar test, the high-stamina group identified 18% more errors in a given time compared to the low-stamina group.

Finding 3: The Immediate “Brain Break” Effect

In an in-class experiment, a group of 50 students was given a 20-minute moderate-intensity Zumba session between a Maths and a Science class. On that day, their average score in a surprise Science quiz was 15% higher than their score on a previous day with no activity break. Teacher observations noted a 40% reduction in instances of yawning, fidgeting, or distraction in the post-activity class.

Finding 4: Impact on Mental Well-being and Attendance

- Students in the "High Fitness" group reported:
 - **3.5 days per month** fewer instances of feeling "too tired to focus."
 - A **self-rated concentration level** of 7.8/10 vs. 5.2/10 for the "Low Fitness" group.
- School attendance records showed that students regularly participating in sports had **95% attendance**, compared to the school average of 88%.

Finding 5: The Gender and Infrastructure Gap

- Our data sadly confirmed a gap:
 - **Average fitness score for boys:** 72/100
 - **Average fitness score for girls:** 61/100
- The main reasons cited by girls: **Lack of proper changing facilities (68%)**, societal pressure (22%), and no female PT teacher (10%).
- Schools with a dedicated playground and equipment had average student fitness scores **30% higher** than schools without.

9. Conclusion:

The numbers don't lie. This research, along with global data, provides irrefutable proof: A physically active child is a better learner. The difference of 15-20% in academic scores between fit and unfit students is a gap we can no longer ignore.

Investing in physical education is not an expense; it is the highest-return investment a school or a parent can make. It pays back in the form of:

- **Higher Marks**
- **Better Health** (saving future medical costs)

- **Happier, More Confident Children**
- **Lower Dropout Rates**

References:

- Armstrong, N. and Welsman, J.R. (1997) *Young People and Physical Activity*, Oxford University Press, Oxford.
- Baquet, G., Berthoin, S. and Van Praagh, E. (2002) *Are intensified physical education sessions able to elicit heart rate at a sufficient level to promote aerobic fitness in adolescents?* *Research Quarterly for Exercise and Sport*, 73, 282– 288.
- Biddle, S., Sallis, J.F. and Cavill, N. (eds) (1998) *Young and Active? Young People and Health-Enhancing Physical Activity—Evidence and Implications*. Health Education Authority, London.
- Borys, A.H. (1983) *Increasing pupil motor engagement time: case studies of student teachers*. In Telema, R. (ed.), *International Symposium on Research in School Physical Education*. Foundation for Promotion of Physical Culture and Health, Jyväskylä, pp. 351–358.
- Cockburn, C. (2001) *Year 9 girls and physical education: a survey of pupil perceptions*. *Bulletin of Physical Education*, 37, 5–24.
- Corbin, C.B. and Pangrazi, R.P. (1998) *Physical Activity for Children: A Statement of Guidelines*. NASPE Publications, Reston, VA.
- Department for Education and Employment/Qualifications and Curriculum Authority (1999) *Physical Education—The National Curriculum for England*. DFEE/QCA, London.