

# Wasted exercise? Physical activity, the classroom and academic performance.

Jimmy Hupton, Sport Science Lecturer at City College Norwich, UK. [jhupton@ccn.ac.uk](mailto:jhupton@ccn.ac.uk)

CHALLENGING MINDS. INSPIRING SUCCESS.

## Intro:

Research suggests physical activity (PA) may foster improved academic performance (AP); yet pressure on resources are at odds with encouraging PA into curriculum time.

More research in UK FE/HE colleges was needed to support informed discussions about curriculum design and priorities given to physical activity initiatives.

## Methods:

Participants divided into five groups and three experimental designs:

- 1.) n=88 Teacher and student opinions of PA timing and its effect on learning where recorded.
- 2.) Control Group n=34 no PA lesson on the day of investigation; PA9 Group n=35 1 hour PA lesson at 9am; both Control and PA9 conducted three written psychometric-cognitive tests at 11am on the day of investigation.
- 3.) Pedometer group (PEDOM) n=50 recorded PA for 7 days and were compared to their AP outcomes and attendance rates.

## Key References:

Davis, D. and Cooper, S. (2011) "Fitness, fatness, cognition, behavior, and academic achievement among overweight children: Do cross-sectional associations correspond to exercise trial outcomes?" *Prev Med.* 52 Suppl 1:S65-9.

Diamond, A. (2010) "The evidence base for improving school outcomes by addressing the whole child and by addressing skills and attitudes, not just content." *Early Educational Development.* 21 (5).

Trudeau, F. and Shephard, R. (2010) "Relationships of physical activity to brain health and the academic performance of school children." *Am. J. Lifestyle Med.* 4.

William, D. (2010) "The classroom experiment." BBC: UK.

## Results:

- 1.) Teacher and student opinions showed evidence for responders and non-responders, but response was generally positive to PA improving AP if deployed correctly (e.g. appropriate cool down).
- 2.) PA9 students showed superior psychometric-cognitive test performance in two of the three tests (Fig. 1 & 2).

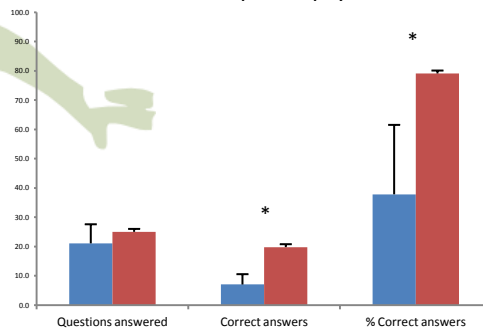


Fig 1: Results of Data Interpretation test between control group and group that had exercise 9-10am (\* = P<0.01 statistical difference between groups).

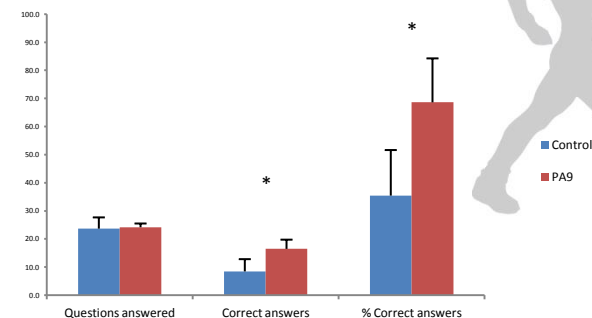


Fig 2: Results of Abstract Reasoning test between control group and group that had exercise 9-10am (\* = P<0.01 statistical difference between groups).

- 3.) PEDOM demonstrated no significant relationship between weekly PA and academic performance. Positive relationship was demonstrated between academic performance and attendance (Fig. 3).

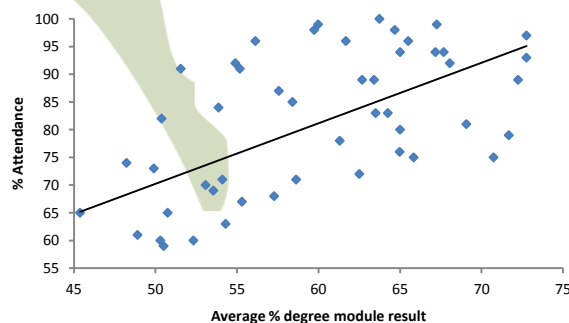


Fig 3: Correlation between average module mark and Average % attendance (n=50, R=0.59, P<0.01: significant relationship).

## Discussion and Conclusion:

The study suggests PA could improve AP and provides some argument for increased time allocation, promotion and funding for physical activity during a time where budgets are constrained. PA at the start of the academic day seemed to have a significant impact on the psychometric-cognitive test outcomes. The relationship between habitual physical activity and academic achievement was unverified. It is important to demonstrate effectiveness in more well-designed research before investing substantial resources in original strategies around physical activity. However, it is also important to recognise the wider benefits of regular physical activity compared to sedentariness when arguing for increasing PA before overwhelming experimental evidence is available for increasing AP alone.