



Title: The effectiveness of core PE lessons to improve physical fitness

Author(s): Sarah Martin and Jackie Arthur

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Abstract

The Government white paper for Health (2010) strategically targeted education to address physical activity patterns in young people to improve long-term health of adults in the UK. Whole school aims and subject specifications are driving the concept of healthy, active lifestyles, yet activity levels in Physical Education (PE) are of insufficient intensity to establish health benefits (Ofsted, 2013). The 2014 curriculum promotes greater flexibility in curriculum design at department level, yet little is known about the impact of such freedom on moderate-to-vigorous physical activity (MVPA) resulting from activity choice or gender engagement.

This study determined the MVPA intensity in Key Stage 3 core PE lessons, and the influence of activity-type on these intensity levels.

Upon University ethical approval, heart rate (Activio Sport System 2010, Stockholm) was monitored during 28 key stage 3 Core PE lessons across 4 schools in the south-west of England. Two-hundred-and-forty-eight measurements (139 males, MHR 198.6 ± 0.4 BPM, 109 females, MHR 198.4 ± 0.3 BPM) of %HRMax (Tanaka *et al.*, 2001) and periods of activity versus inactivity was recorded. MVPA was defined as 60-79% of HRMax. Teachers were asked to deliver their usual core PE lesson content.

Results indicate that during a 50-minute core PE lesson, 22.57 minutes (45.14% of lesson time) were spent active with 11.12 minutes of lesson time spent at MVPA intensity. A significant difference ($p < 0.05$) was noted in intensity between genders, and activity-type revealed a degree of significance in terms of MVPA engagement ($p = 0.00$).

In comparison with similar research throughout Europe (Fairclough & Stratton, 2005; Sarradel *et al.*, 2011), the health benefits obtained through PE were largely inconclusive. This study identified that Key Stage 3 core PE lessons are currently falling short of the suggested MVPA goals for pupils, although intensity could be addressed through consideration of the activity-type with careful planning and interpretation of the curriculum.

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