

## Children's On-Task Behavior following a Classroom-based PA Intervention Tan Leng Goh<sup>1</sup>, Darcy Marvin<sup>2</sup>, You Fu<sup>3</sup>, Andrew T. Harveson<sup>2</sup>, Mandy K. King<sup>2</sup>, James C. Hannon<sup>4</sup> and Timothy A. Brusseau<sup>2</sup> <sup>1</sup>Montclair State University, Montclair, NJ, <sup>2</sup>The University of Utah, Salt Lake City, UT, <sup>3</sup>University of Nebraska at Kearney, Kearney, NE, <sup>4</sup>West Virginia University, Morgantown, WV

### Introduction

Children who go through prolonged periods of academic instruction often become more off-task (Pellegrini & Davis, 1993). Systematic observation in the classroom is the best strategy to measure students' on-task behavior, but such behavior is typically more difficult to measure because of the burden placed on the observers, and time required for recording the observation (Mahar, 2011).

Previous research indicates that classroom-based physical activity (PA) can increase children's on-task behavior. (Grieco, Jowers, & Bartholomew, 2009; Kibbe et al., 2011; Mahar et al., 2006). A comprehensive review of literature also provided support for a positive association between PA and academic achievement, cognition, and behaviors (CDC, 2010). To build on this research, the purpose of this study was to examine the effect of a classroom-based PA intervention on children's on-task behavior.

## Method

Classroom teachers from four elementary schools were trained to implement 10-minute bouts of a classroom-based PA intervention. Three of the four schools are Title 1 schools. Children from 11 classes (one 1<sup>st</sup>, three 2<sup>nd</sup>, two 3<sup>rd</sup>, one 4<sup>th</sup>, two 5<sup>th</sup>, and two 6<sup>th</sup> grades) participated in the intervention.

On-task behavior was measured using systematic observations (5-second interval momentary time sampling procedure). The classes were observed four times during baseline and four times during intervention. During intervention, the observers observed the class 15 minutes before and 15 minutes after teachers implemented the classroom-based PA. During baseline, the teachers carried out their lessons as usual with no intervention. The observers observed the class 15 minutes, then waited for 15 minutes, and observed the class for another 15 minutes.

A two-way repeated-measures ANOVA was used to compare mean percentage on-task behavior between: (a) pre-no PA versus post-no PA during baseline, and (b) pre-PA versus post-PA during intervention. Significance levels were adjusted for multiple comparisons with the Bonferroni procedure.

## **On-Task Behavior Observation**

cord:	corder hool									(Pri / Sec) Teacher Grade							Date							
me S	ne Started						Time finished						Baseline/Interver						ntion Pre-/			e-/I	P	
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OT On-Task. Any behavior in which a student is attentive to the teacher or actively engaged in the appropriate task, as assigned by the teacher OFT Off-Task. (E.g. – gazing off, placing his head on the desk, reading or writing inappropriate or unassigned material, talking to or looking at other students when not part of a given assignment, and leaving the desk without receiving permission from the teacher or teacher's aid)

### Results

	<b>On-Task Behavior Percentage (Mear</b>
Pre-no PA	$91.5 \pm 2.5$
Post-no PA	$82.8 \pm 7.2^*$
Pre-PA	$91.3 \pm 5.4$
Post-PA	$92.4 \pm 3.4$

\* p = 0.002 between pre- and post-no PA

# Acknowledgement

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#### Post-activity





#### Conclusions

Prolonged periods of academic instruction can result in offtask behavior among elementary school children. Incorporating PA during the school day can help reduce students' off-task behavior. Data from this study indicated that there was a mean percentage decrease of on-task behavior by 8.7% during baseline, whereas there was a mean percentage increase of on-task behavior by 1.1% during intervention. Children became less on-task after they engaged in classroom instruction for a prolong period of time. Conversely, participating in a 10-minute classroom-based PA helped to prevent the children from becoming off-task.

Considering that classroom-based PA is relatively easy for teachers to implement in the classroom, it is recommended that children participate in short bouts of classroom-based PA throughout the school day to sustain their on-task behavior. Future research examining the effectiveness of classroombased PA on academic performance, such as standardized tests and grades can provide a stronger rationale for policy changes to require more PA during the school day (Mahar et al., 2006).

#### **Selected References**

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