

# Would Implementation of Core-Specific Yoga Poses Have an Impact on the Overall Core Strength of the Young Child?

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## Introduction

Professionals working in early childhood education have observed a significant decrease in the primary-aged child's overall core strength. A lack of core in the trunk of the body may contribute to a child's inability to sit and/or stand in a functional posture for learning. The implications for a child with diminished core strength may impact cognitive ability, intellectual growth, bilateral use of extremities, and often lack of completion of task.

Identified societal changes in recent years, such as increased use of technology both at home and in the educational setting, less unstructured outdoor play, a lack of heavy work such as raking leaves or making a bed and the decline of tummy time to infancy, have contributed to a noticeable decline in the young child's overall core strength.

This action research explores the impacts of introducing core-specific yoga poses to young children, with the goal of assessing whether this yoga intervention can improve the core strength of the child and support functional learning posture.

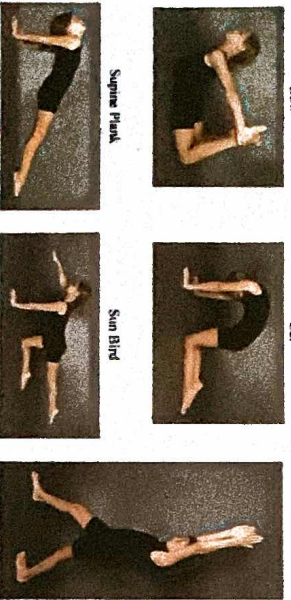
## Method

Over a year of focused observation, specifically with regard to core strength and functional learning posture during work time and/or group time in a Montessori classroom, this researcher recognized four signs of diminished strength in the trunk of the body of young students.

1. an inability to sit upright with legs crossed undisturbed by the grasp of another limb, additional support from leaning forward or by bracing the knees with two hands
2. difficulty sitting in a child-sized chair with the bottom pushed towards the back of the seat and feet planted on the ground with knees and legs under the table
3. difficulty walking and/or waiting in line while standing upright without leaning on a railing or ledge for support
4. difficulty standing upright around a child-sized table for an extended lesson.

A child receiving a plus for core or motor ability generally and most of the time demonstrates capability. A child receiving a minus in one or more ability generally and most of the time demonstrates inability.

It was determined that a yoga practice that specifically targets the muscles in the core of the child's body could be beneficial. Twenty yoga poses were selected for their engagement of stomach, back, gluteus and pectoral muscles. A sample of representative poses are shown below:



After the nine-week implementation of these yoga poses, presented in a cyclical fashion, the twenty students were again assessed with a +/- measure of their core abilities with the four poses associated with diminished core strength.

## Results

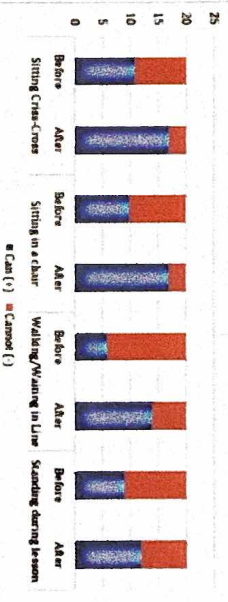
Sample Distribution: 20 Children from a Primary Montessori Classroom

- Ten Boys
- Ten Girls

- Five three-year-olds
- Seven four-year-olds
- Five five-year-olds
- Three six-year-olds

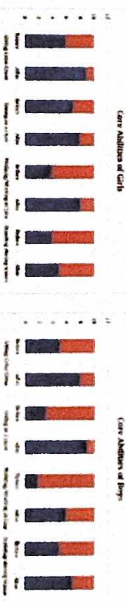
There was an inclusive increase in both boys and girls of all ages, in all four areas of determined criteria. The entire sample of both genders showed the most growth in walking/waiting in line.

## Core Abilities for Entire Class Across Indicators



Girls began the study stronger than boys, while boys showed more overall gain. For girls, the most growth was shown in walking/waiting in line.

Boys exhibited the most growth in both walking/waiting in line and sitting in a chair.



Four and five-year-olds showed the most total gain, especially respecting the criteria of walking/waiting in line. They were able to gain 100% in the ability to sit cross-crossed on the floor. Six-year-olds demonstrated growth in all areas, except walking/waiting in line, where 100% presented positive prior to intervention.

## Explanation of Qualitative Analysis

Montessori educators are trained to use observation as a part of their assessment measures. Through ongoing and constant observation of students, this researcher arrived at the plus or minus score for each child for each criterion with both a definitive observation of pre-determined indicators or the lack of, as well as an overall impression of their general classroom presentation in regard to core strength and functional learning posture. It is acknowledged that observation and generalizing are a part of the overall data analysis of this action research and are subject to both bias and non-scientific quantification of findings. Verbalized notes and definite observations with attention to core strength, posture and the four determined indicators were taken throughout the nine-week intervention and referenced when making post-study plus or minus judgments.



Knee Down Twist



Plank

## Discussion and Implications

A child with diminished core strength may frequently have only unilateral use of upper extremities. Bilateral use of arms and hands allows for manipulative activities that cross the midline, engaging both hemispheres of the brain. Children who use only one hand and limb to attempt a task such as, but not limited to, writing, learning, and tying may have extreme difficulty, become frustrated and quit. Termination of task leads to an incomplete work cycle and thus sustains learning through repetition. Inadequate core strength leads to a non-functional posture in a chair or on the floor.

Children with poor core strength are observed slumping, leaning, stabilizing in a compensatory manner both while seated in a chair and on the floor. Mental and physical energy are expended stabilizing the core and attempting a functional learning posture before academic or pre-academic learning happens. Additionally, a child who must over-attend to posture, or become fatigued physically and mentally due to effort, may not have the same ability to listen to directive instruction as non-impaired peers.

As children grow and change rapidly during the years of early childhood, it cannot be definitively determined that the yoga intervention was the cause of positive change in core strength.

It is suspected that by drawing attention to the core of the body through both verbal expression and directed physical activity, that a heightened attention to posture and core muscles was obtained and impactful.

There is an unavoidable bias within the data collection as the classroom teacher/researcher has an established personal relationship with each subject. The data collected is qualitative in nature and reflects this ongoing relationship and perception of each child's strengths, weaknesses and typical behaviors.

## Literature Review

In contemplating the use of a targeted yoga practice to promote the young child's overall core strength and functional learning posture, six articles of relevant research where yoga, exercise and/or intentional mindfulness have been utilized with young children were examined. Five of the studies introduced either a yoga practice, a meditation or guided/controlled breathing practice, or a combined practice of yoga with meditation to investigate the potential impact of such practices on the overall emotional health and physical abilities of the school-aged child (Mandelbaum, et al., 2010; Jensen, Stevens, Koenig, 2011; Shapiro, et al., 2014; Parsh, a, 2018; Peck, Kelle, Boy, Theodor, 2003). One study investigated the impact of targeted core-strengthening exercises on the overall motor skills of elementary children (Boysal, Tara, Byrlik, 2018).

Review of relevant articles show that yoga and mindfulness practices are gaining interest among educators, administrators, psychologists, parents and others. Children too, are enjoying mind-body exercise as a way to move, explore, breathe and play a part in their own emotional responses, relationships, mental health, physical health and academic achievement. Interestingly, there are factors in the lives of children that impede the ability to achieve success in school. Additionally, many of these same factors impact the social, behavioral and emotional well-being of young children. Despite existing issues, it could be said that students, educators and families face no negative impact by exploring yoga and meditation. One study notes that contemplative practices for children are becoming increasingly widespread and the preliminary evidence is encouraging (Shapiro, et al., 2014). Drawing from reviewed literature, it would seem that yoga would be of benefit to young children with the development of a strong core foundation that will support a functional posture for attentiveness, focus and completion of a task. An additional benefit, may be to classroom teachers who are looking for well-embraced modifications to their curriculum that address current observation of a child's need for the best posture in an educational setting.