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## Purposeful Movement in an Early Childhood Classroom

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# Purposeful Movement in an Early Childhood Classroom

An Action Research Report

By Dana McCabe

Purposeful Movement in an Early Childhood Classroom

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in fulfillment of final requirements for the MAED degree

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**Abstract**

The purpose of this action research was to determine the effects of physical activity through purposeful movement on behaviors and the ability to focus in a mixed-age Montessori Early Childhood classroom. The intervention took place over a period of six weeks in an independent school setting with 17 children ages 2.5 to 6. Data was collected using observation tallies and notes, a teacher journal, and interviews with the children. Results show some of the children's behaviors were positively affected by the use of specific movement materials. Although there was not much change observed, the intervention appeared to help some children become less distracted and helped them with their ability to focus on lessons in the classroom. Movement lessons in the research that required focused attention for their use were seen to create feelings of calmness in the children. Further research might include the introduction of focused movement exercises such as yoga or the introduction of meditation.

*Keywords:* focus, purposeful movement, Montessori.

Children are often on the move, and through movement learn about themselves and their environment. From the time they are first able to turn over, babies continue learning about their bodies and how to control their movement. As young children mature and learn to walk, run, and then perhaps gallop, their need for movement continually guides them to develop their bodies. I have taught for over thirty years in Early Childhood settings. I currently teach a Primary aged (3-6 years); over the years, I have observed children appear to have an increased need for movement. Whether this stems from the longer hours children spend at school, or because there are underlying issues, this perceived increased need for movement is an area of interest. At times, some children appear to have even greater needs for physical activity and are recommended for screening. These children are, at times, identified as having a Sensory Processing Disorder. Sensory integration is the process described as “the brain and nervous system's ability to organize ... stimuli” (Viola, S. & Noddings, A., 2006, p. 40). “When sensations flow into the brain in an organized or integrated manner, we can use the sensations to form perceptions and create learning experiences. Dysfunction occurs when the nervous system is unable to integrate incoming information smoothly” (Viola, S. & Noddings, A., 2006, p. 40). In addition to the five senses we are aware of, the senses of “movement and balance” (Isbell & Isbell, 2007, p. 12) have an amazing impact on the way children perceive the world around them. If an imbalance in the way the brain processes any of the “seven senses” (Isbell & Isbell, 2007, p. 14) is discovered, a large array of issues may arise. These include poor coordination, poor attention spans, over-sensitivity to sound or touch, and low or high activity levels (Isbell & Isbell, 2007). When children have difficulties, they struggle with many of these issues. Consequently “the ability to directly control their bodies” [is lessened and] “the efficient and progressive pathways to further learning are compromised” (Fuchs & Craft, 2012, p. 8).

Through day-to-day observations and careful interactions with a child the adult can gain a better picture of a particular child's varying developmental needs.

I was motivated to implement and conduct research on introducing more large-muscle activities because of identified needs in the classroom. Some children in the class are identified as having sensory processing issues and benefit from body breaks during the day. It seemed possible all children could benefit from these breaks as well. My research began by finding books and articles describing movement shelves or activities and their use in Early Childhood classrooms. I was concerned the introduction of movement activities during a morning work period had the possibility of creating a chaotic and frenzied atmosphere. Therefore, I focused on creating experiences that would avoid disorder by using an outdoor garden space or the playground for the activities. I predicted the new activities would be most beneficial for children who have difficulties with attention and body control. I believe all students need to have freedom and the ability to move whenever they feel the need, but the activities offered must be purposeful and valuable.

In every area in a Montessori classroom, there are shelves with prepared lessons for children to manipulate. During the Montessori work period, students have the freedom to choose their activities independently. In my current Montessori classroom, there are children identified as having sensory processing (SP) issues as well as children that are typical in their development. One suggestion for supporting the children with SP issues is the use of body breaks that include physical activity during the morning. Through my observations of the children in the environment, I hypothesized a shelf dedicated to movement could be utilized similarly to other areas of the classroom. This shelf, ideally, would provide access to prepared movement lessons and students would have the chance to utilize these lessons in the outdoor garden area during the

work period. In addition to the activities already in the garden, (hammering nails into a tree stump or watering the garden beds), new activities included bucket stilts and a walking beam for developing balance, gross motor exercises such as tossing balls and beanbags, as well as group movement activities such as running and hopping. My goal for the movement shelf is to have all the children become more focused within the classroom environment through the use of enticing activities designed to utilize their muscles in focused ways. According to Fuchs and Craft, “as a child repeatedly practices movement lessons, the work of the child seems to help override disorganization and develops inner discipline” (2012, p. 9).

For this research, I engaged in individual and whole class observation of students to influence my lesson plans. I wanted to determine the movement needs of the classroom. I speculated if there were more opportunities for movement in the classroom, distracting movements, and impulsive behaviors would decrease thus creating a calmer and more focused environment. The goal would be children acquiring improved sustained attention, or what can be termed “normalized” for a Montessori classroom. The term “normalization” should not be considered a substitute for the term conformity. Montessori observed when children are allowed freedom in a prepared environment they flourish. After working with materials that fully engage their interest, children appear to be refreshed and contented and grow in inner discipline and calm. She called this process "normalization" and cited it as "the most important single result of our whole work" (1995, p. 204). My goal is to find ways to assist them to reach this state through purposeful and meaningful movement activities. My decision to introduce movement activities created a question. The question I anticipate answered through my action research:

To what extent will the creation of a Purposeful Movement Program for a Montessori Early Childhood Classroom facilitate the development of children who are self-regulated and

peaceful in their environment?

## **Review of Literature**

### **Impact of Movement on Development**

Movement, or physical activity, is a primary teaching method for young children. According to Wang (2004, p. 32) “Movement is part of children’s lives from the very moment they are born.” Research has shown motor development and cognitive development are closely intertwined (Diamond, 2000; Lillard, 2005). The benefits of physical activity (movement) for the healthy development of young children are well documented (Diamond & Lee, 2011; Fuchs & Craft, 2012; Wang, 2004). The research shows movement is essential for physical, social and emotional health. When children engage in general movement (e.g., walking) and directed or structured movement activities (e.g., hopping on one foot), they are learning about their bodies. They are learning how to interact with the physical space around them (Diamond & Lee, 2011; Fuchs & Craft, 2012; Wang, 2004). Through movement, sensorial and physical exploration, children learn how to coordinate their bodies; they learn the effects of their actions on their immediate environment, including other people in their lives. In effect, it is through movement that children learn how to get along with their peers thus allowing them to gain a deeper understanding of themselves and the external world (Fuchs & Craft, 2012).

There are concerns children today are less active than previous generations; today’s children “are sitting more and moving less,” (Fuchs & Craft, 2012, p. 2). Perhaps this is due, in part, to general changes in life style and cultural concerns. For example, infants and young toddlers seem to spend more time in car seats, and there seems to be a reduction in what can be considered “safe outdoor play areas” (Wang, 2004, p. 33). Whatever the cause, children seem to

be spending less time in activities integrating or requiring physical activity. In addition to less time spent in physical activities there appears to be an increase in the amount of time spent in front of screens (Fuchs & Craft, 2012). The outcome is children who are less capable in their ability to use their bodies in active play and exploration (Fuchs & Craft, 2012; Wang, 2004), and who have limited opportunity to interact with the natural world (Fuchs & Craft, 2012). Perhaps now, more than ever, educators of young children need to learn how to assist children in the development of both large and fine motor skills. The creation of a movement program with “pedagogically sound lessons” (Fuchs & Craft, 2012, p. 3) has the potential to facilitate an increase in physical development and the subsequent benefits for young children. Movement benefits children physically and academically. According to a meta-analysis examining the effects of physical activity interventions with young children, “physical activity interventions for preschoolers ... have the greatest effects [when they] take place in early-learning centers, are led by teachers, and involve outdoor play, unstructured activity, and environmental modifications” (Gordon, Tucker, Burke, & Carron, 2013, p. 292). After the review of 249 articles and 15 studies on the effects of physical activity and preschool children, the researchers concluded unstructured outdoor physical activities, such as outside playtime, were the most beneficial for the children. This is in comparison to structured physical education programs. The authors conclude for optimum health benefits, preschool children require between 120 and 180 minutes of moderate to vigorous physical activity daily, but maintain more studies are warranted (Gordon, et. al. 2013).

### **Movement in Montessori Classrooms**

Movement is a central component of Montessori classrooms (Fuchs & Craft, 2012; Lillard, 2005; Woods, 2000a). According to Fuchs and Craft (2012, p. 5) “her philosophy has as

its core movement and purposeful activity for children.” The ideal environment is designed to encourage movement and exploration, and through these, to develop all the senses. Movement is integral to the way humans, especially young people learn (Fuchs and Craft, 2012). The information humans take in from movement is filtered through the senses and guides development (Fuchs & Craft, 2012). Children learn “because of the discoveries found through movement” (Fuchs & Craft, 2012, p. 6). In toddler classrooms, the children are engaged in what Montessori called Practical Life activities; these include cleaning shelves, preparing food and sweeping the floor. Children in the Children's House (ages 3 to 6 years) get work (e.g. toys or activities set up on a tray) from shelves and carry it into the classroom to a table or work mat. When finished they return the tray/activity to the shelves. This develops balance, gracefulness and body control (Woods, 2000a.). The children in Elementary classrooms follow command cards describing movement activities to be acted out on the playground or in the classroom (Lillard, 2005). Montessori (1995) stated,

One of the greatest mistakes of our day is to think of movement by itself, as something apart from the higher functions... both mental and spiritual growth are fostered by this ... mental development must be connected with movement and be dependent on it. (p. 141)

The Montessori method and curriculum support the development of order, coordination, concentration, and independence, as well as gross and fine motor skills. The development of these skills creates a child that feels capable and successful (Pickering, 2008, p. 97). The buzz from activity in a Montessori classroom is evident; there is always movement throughout the day. The children move freely throughout the classroom and are seen using materials that are movement based, particularly in the Practical Life Area (Lillard, 2005). The Practical Life Area

is a section of the classroom intended to resemble activities found in the home and based on children's innate drive for the imitation of the adults in their lives (Woods, 2000a). The activities of Practical Life are in sequential steps and are considered the foundation for later learning in a Montessori classroom. Indeed, the exercises of Practical Life are designed to "serve real and apparent goals" (Lillard, 2011, p. 50), combining movement with meaning. It is in this area that children refine movement and integrate complex concepts through repetition and practice. In every lesson throughout the Montessori classroom, in the Practical Life, Sensorial, Language or the Mathematics areas, teachers present the sequence of movements precisely the way children are expected to use the activity. The same is true for movement activities – whether how to walk through the classroom or how to successfully carry items with care. The materials and the activities in the classroom are designed to assist children in moving in purposeful ways. For example, one specific movement activity falls under the category of Coordination of Movement – Walking on the Line. Most Early Childhood Montessori classes have a line on the floor made out of tape. The activity is to assist children in the development of control of their bodies, as they slowly walk on the line. This "requires focused attention and concentration" (Diamond & Lee, 2011, p. 961), and can be adapted for more skill by the addition of either a cup of water which is carried without spilling or a bell carried without letting it ring (Diamond, Lee, 2011).

### **Current Research on the Effects of Movement on Cognition**

Two different Early Childhood Programs, Tools of the Mind and Montessori, have been shown to enhance the development of Executive Functioning skills (EFs) (Diamond & Lee, 2011). These skills are described as cognitive skills that include "creativity, flexibility, self-control, and discipline" (Diamond & Lee, 2011, p. 959). Briefly defined, EFs are the ability to

concentrate, think, and show appropriate impulse control. Executive Functions are better indicators of school success than IQ, and can be used to predict school readiness and competence as well as future academic success (Diamond, & Lee, 2011). Another indicator of academic success tied to movement is the amount of time children spend learning locomotor skills through movement such as aerobic exercise, as well as yoga or mindfulness practices (Diamond & Lee, 2011). One study “consisted of three parts: sitting meditation, activities to promote sensory awareness and attention regulation through a body scan” (Diamond, Lee, 2011, p. 961). The study consisted of 64 elementary school children, 7-9 year-olds. The results found that through mindful awareness practices, the children increased their ability to self-regulate (Diamond & Lee, 2011, p. 961). The activities in this study are similar to the Montessori movement awareness activity called “The Silence Game,” (called this by Dr. Montessori) (Woods, 2000b). Where Diamond has described children who are self-regulated and peaceful in their environment as having Executive Function Skills, Montessori teachers use the term “normalized” (Diamond, & Lee, 2011, p. 961). The normalized child has developed a love of constructive and purposeful work, deep concentration and focus, is self-disciplined, and demonstrates satisfaction in accomplishments (Lillard, 2011). Current research highlights an emphasis on movement (Diamond & Lee, 2011), especially fundamental movement skills (Fuchs & Craft, 2012). Fundamental movement skills develop after the child has gained some skill in locomotion. According to some researchers, fundamental movement is the continued development of skills such as running, hopping, skipping and galloping (Fuchs & Craft, 2012).

### **Movement for Children With Diverse Needs**

In most Montessori teacher training programs, an emphasis is placed on Montessori’s (1995) statement, “Follow the Child” (p. 30). In a Montessori class, this dictate calls teachers to

explore carefully their educational pedagogy, examine what lies at the core of the statement, considering what it means to follow the child. All classrooms have children with varying abilities, but more children appear to be coming to early childhood and elementary classrooms with a range of problems from attention deficits, behavioral concerns, and sensory processing disorders (Cossentino, 2010). According to Cossentino (2010), Montessori schools are experiencing a significant increase in the number of families who are seeking learning environments for children with special needs. Cossentino stated, “anecdotal reports suggest the incidence may be ... 22% or higher” (2010, p. 38). Perhaps this is in part because parents choose a Montessori school when their child does not function successfully in traditional school settings (Cossentino, 2010; Pickering, 2003), or because there is a belief the Montessori environment is designed to be viable for all children. One similarity among children with these disorders might be the inability to be quiet, sit still or pay attention; they have a more challenging time than the neuro-typical child does. The fact of the matter is the very nature of a group of children in a room creates a requirement to keep movement and noise to a minimum to avoid a feeling of chaos. The challenge is how to address needs for physical movement, especially among a population of children whose sensory systems may require movement or some sensory stimulation different from, and perhaps more intense, than the norm (Fuchs & Craft, 2012). Children with diverse needs are in classrooms and teachers are called upon to meet these needs in creative ways. Fuchs and Craft stated, “the direct teaching approach to fundamental movements, [and] independent practice ... are applicable to children with all abilities” (2010, p. 12). Whatever the underlying causes, for children who have difficulties in group educational settings, teachers must change their expectations concerning the child’s ability in areas of attention and focus (Pickering, 2003). Some even go so far as to suggest that teachers must

“accept that there will be more non-productive time for this child than a child who can attend and process well and, therefore, is capable of self-direction and discovery learning” (Pickering, 2003, p.13). Some children will have received a screening and have an identified disorder. It is important for the teacher to be well versed in how to successfully meet the needs of all learners, including children with identified disorders. Perhaps the answer lies in either the addition of movement activities in the Montessori classroom, or the greater inclusion of body breaks that would allow children with issues such as these to engage in “heavy work” (Isbell & Isbell, 2007). Heavy work refers to activities or exercises that are physically strenuous and give input to the child’s muscles and joints (Isbell & Isbell, 2007, p. 132). For example, a child with a sensory seeking disorder may need extra practice in how to meet their sensory needs through heavy movement or activities. Providing activities such as moving heavy objects, wearing weighted vests or backpacks or wearing weights while walking on the line are likely to satisfy the need for heavy movement. Presenting the use of these exercises similarly to others in the environment can normalize these activities. Additionally, there might be other children who could benefit from the activities, who may also be drawn to them, further normalizing these activities.

### **Data Collection**

The purpose of this Action Research Project was to determine whether or not the introduction of lessons focused on purposeful movement would contribute to the development of sustained focus and calm demeanor on the children in a classroom. The question on my mind as I observed the children centered on whether self-discipline and the time children focused and concentrated on lessons would increase after they experienced (or participated in) specific movement activities introduced for the purpose of this action research. I implemented a

movement shelf in an outdoor workspace where students could choose lessons from the shelf at any time during the normal work period.

The participants in this project included 17 students varying in ages from 2.5 to 6 years old. The setting was a Children's House classroom in an independent Montessori school located in a mid-sized Southwestern town. The school has a population of approximately 200 students in Early Childhood Classrooms, Junior Elementary (1st-3rd grade) and Senior Elementary (4th-6th grade).

During the 2015-2016 school year I collected data for six weeks during the months of September and October. With permission from their parents, the students in one Children's House classroom all participated by choosing lessons from the newly introduced movement shelf. The lessons included: Ball throwing and catching, carrying an object on a balance beam, hopping into hula-hoops after throwing bean bags, running with streamers, jumping practice while listening to instructions, skipping/galloping lessons, and stilt walking with short stilts (see Appendix A). I did not want to overwhelm the children by adding too many new lessons on one day, so I introduced lessons during a week (five days). The activities were available to all the children during the work period to use at will, or when invited by a teacher as a means to offer body breaks.

The stated plan for this project was that data collection would occur through observations of the behaviors of the children pre and post the introduction of activities (see Appendix B). The descriptors for observable behaviors were impulsivity, distractibility, focus, and self-awareness. I collected data using tally sheets. First I created a baseline of behaviors in the classroom using the same descriptors: impulsivity, distractibility, focus, and self-awareness. My original plan was to collect data for two weeks, each day of the week to establish a baseline.

However, this changed to data collection for one week due to the number of days the school closed for either conferences or holidays that would interfere with data collection the following weeks. I planned to collect for thirty minutes per day on those days, in ten-minute blocks, randomly throughout the morning work period. I found ten-minute observations challenging to accomplish because there were many new children in the class who needed more guidance than returning children did.

I observed and collected data for approximately 5 or more minutes three to four times per day randomly throughout the morning. After the introduction of the new activities designed to help children become more self-regulated, data was again collected through the use of tally sheets (see Appendix B) and the same descriptors (impulsivity, distractibility, focus, and self-awareness). Although I planned to collect data each day of the week for thirty minutes on those days, it was difficult to do until the children became more familiar with the class routine. When the children became more accustomed to the routines of the classroom, I was able to extend the observation time on most days for the full ten minutes. The data collection was originally designed to be collected for three weeks. I felt more time was needed and extended it to five weeks.

Data was collected (tally sheets) to determine the frequency each movement activity was chosen on a daily basis (see Appendix C). This was accomplished through observation and/or by asking students what activities they chose. Student-created artifacts were produced and collected after conferencing with the students at the end of the research (Appendix D). These artifacts include dialogs as well as illustrations created by the children. After interviewing the children and asking them questions, they were offered the opportunity to illustrate the exercise they chose as a favorite. Not all of the children were willing to create illustrations, but all were willing to

engage in dialog. The dialog needed to be done individually to eliminate the possibility of the children repeating answers they heard from a previous child or a particular friend. The questions asked in the dialog were “Which activity did you like the best?” “How did this activity make you feel?” “Did you feel different after you used the activity?” “Did you feel calmer after the activity?” I informally collected data about heart rates when children participated in vigorous activities to develop an awareness of their bodies and functions. I also utilized a Self-Reflection Journal to keep a record of my personal experiences and reflections to record any conclusions reached.

My primary research question was “To what extent will the creation of a Purposeful Movement Program for a Montessori Early Childhood Classroom facilitate the development of children who are self-regulated and peaceful in their environment?” After observations of classroom behaviors additional research questions arose. It appeared some activities, such as stilt walking or carrying heavy objects while walking on a balance beam required more focus and attention to movement and were calming. Activities that required high-energy output, such as hopping into hoops, throwing balls or beanbags and running with streamers, were more stimulating and less likely to create a feeling of calm. Although all of the activities were clearly demonstrated to the children, a few of the activities invited variations and extensions. The hula-hoops with beanbags sometimes became wheels, and the ball throwing activity changed from throwing balls into baskets to trying to throw balls as high as possible. This sometimes led to the balls going over fences and needing to be retrieved.

I found myself reflecting on how to determine which activities were more suited to promoting calm, whether the variations were acceptable and what purpose they met when the children changed the use. This prompted a secondary research question, “what purposeful

movement activities promote feelings of calm?” Overall, movement is shown to be beneficial for children to become more engaged in their activities, develop precise fundamental movements, assist in cognitive development and lessen perceived negative behaviors. A problem identified might be the amount of time that young children are expected to remain in sedentary activities, and whether having moderate to vigorous physical breaks can further enhance their ability to attain calmness and self-regulation.

### Data Analysis

I began gathering data before the introduction of activities to establish a baseline of behaviors. The original plan of gathering baseline data for two weeks was shortened to one week to allow for more time to gather information on the prepared activities. During this baseline week, I kept track of a variety of behaviors, grouping behavior into two groups: those typically perceived as undesirable and those usually perceived as desirable. Undesirable behaviors included impulsivity, lack of impulse control including outbursts of yelling at peers or aggressive behavior, and distractibility or the inability to stay on task or stay focused on an activity. The perceived desirable behaviors included self-awareness and focus.

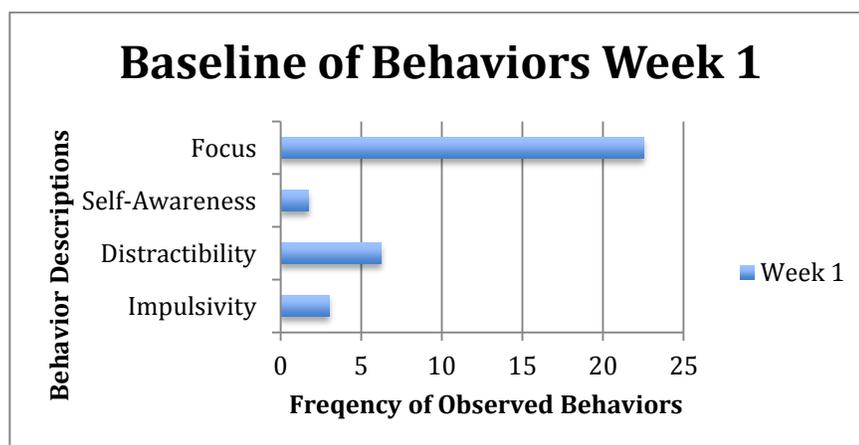


Figure 1: Baseline of Behaviors

The activities I introduced to the classroom were designed to answer my research question. My hypothesis was the research activities would enable the children to become increasingly aware of when they needed a body break (self-awareness) and develop more strongly age appropriate attention to a task. After keeping tally notes regarding how often a behavior was observed, then averaging those behaviors for the number of days per week, Figure 1 shows that during the baseline week children were able to focus but also had periods of distractibility during the approximately three-hour morning work period. It also appeared that many children wandered and were unable to choose an activity on their own. Impulsivity was a concern as well; there were several children prone to interrupting peers who are engaged. I was able to concentrate on observations because my cooperative teacher is also a trained and certified Montessori teacher. Her ability to give the lessons during the morning gave me the liberty to spend the length of the research in the role of keeping an overview of the children. Subsequently, I had frequent opportunities to scan the classroom to observe where the children were and whether they were choosing to focus on an activity. I was also able to observe when children were distracted or acting in an impulsive manner that was disruptive to others. After the gradual introduction of the new movement lessons (over one week), I was interested to see if the negative behaviors decreased and if positive behaviors increased. In retrospect, I should have stuck to the original plan to give stronger, perhaps more relevant baseline data. Given that, I would have had to extend the research for a longer period.

Although the new lessons were, for the most part, well received some were more popular than others (see Figure 2). My observations appear to suggest the children chose activities that did not require an adult guide for their use most often. The activities that required an adult to give directions (hopping with directions or lessons on skipping and galloping) were chosen less

often and, additionally, the children did not identify these activities as a “favorite.” After gathering data and averaging how often the children used a particular activity, it appears the favorite activities were either fundamental movement lessons (Fuchs & Craft, 2012, p. 29), such as ones that needed the child to work on balance or strength, or ones using extreme energy outputs (Figure 2). The same lessons that focused on balance were also the activities the teachers suggested to children when there appeared to be a need for a body break.

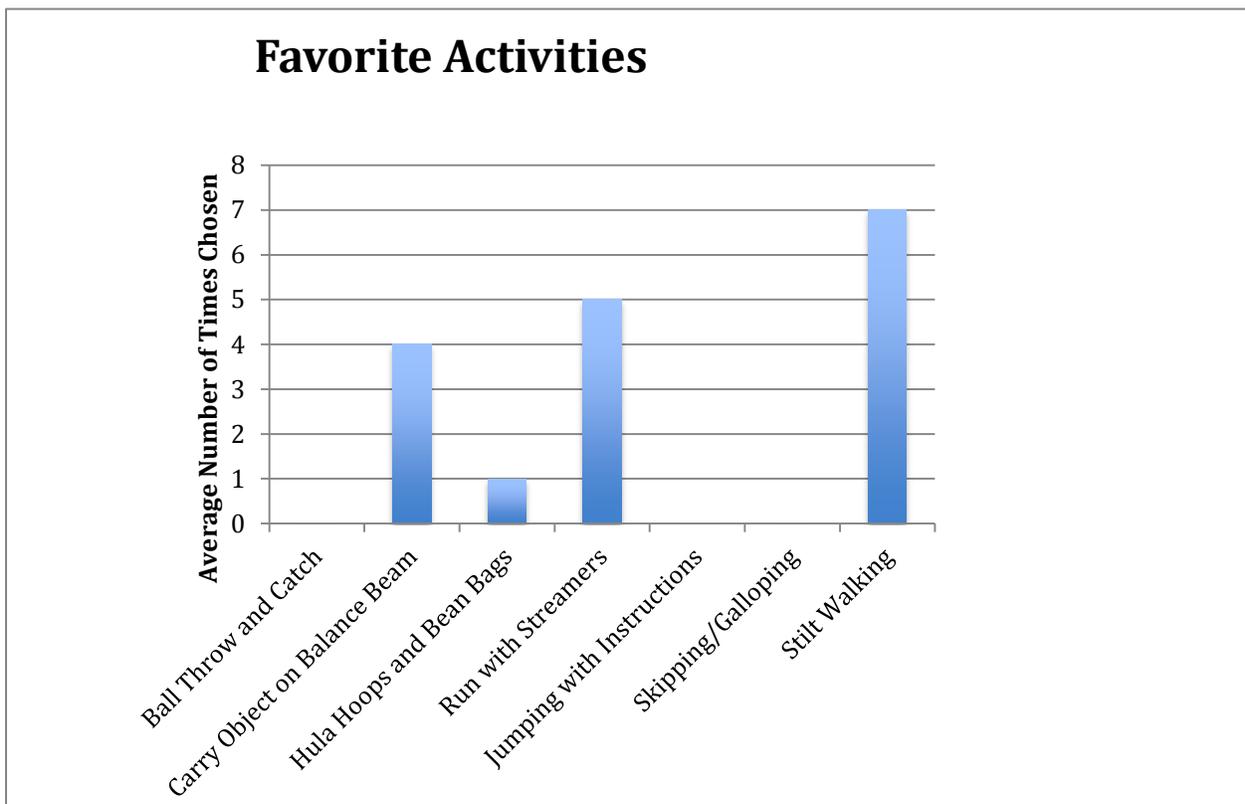


Figure 2: Favorite Activities

After the data collection ended I noted the children’s focus increased and distractibility decreased between the beginning of the research process and the end, but I cannot definitively state it is due to the introduction of the movement lessons (Figure 3). It is possible this is due to the natural process of the children becoming more comfortable in the class. By this time in the school year students have received more lessons. Therefore, more of the Montessori materials

are accessible to them. Perhaps this factors into the ability of the children to make more independent choices for themselves. An interesting observation is the increase of impulsivity. I am not sure how to explain the increase in incidents of impulsivity, but as it was slight, I cannot say it was due to the activities. I also noted an improved rate of self-awareness, but again, cannot say definitively this is due to the research materials.

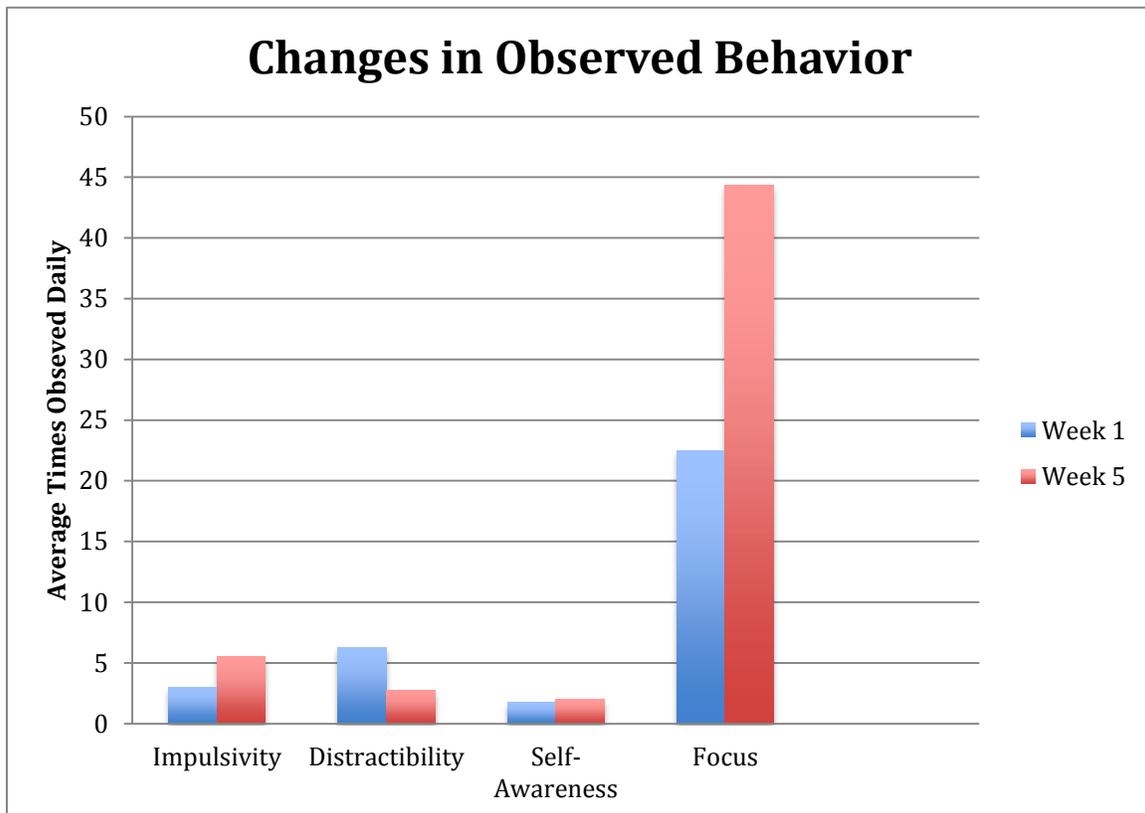


Figure 3: Changes in Observed Behavior

I was interested to know how frequently over the span of the five weeks the children chose one activity over another (see Figure 4).

Walking on bucket stilts was, by far, the activity most frequently chosen, even in the weeks following the initial introduction. Running with streamers was the second most chosen; during interviews the children verbally identified this activity as their second favorite. I thought it was interesting that their verbal assessment of the activities aligned with the numerical data on

how often activities were chosen. Walking on the balance beam came in third, regarding the number of times chosen as well as popularity as identified verbally by the children. Running with streamers initially was a frequently requested activity. After several school closures, it seemed this activity was forgotten. It would make gains in use if I suggested the activity, but I noted that after a long weekend it again would not regularly be chosen. The activities that needed an adult to assist or be involved, such as guided lessons on jumping or skipping, were infrequently requested, and sometimes were rejected when suggested.

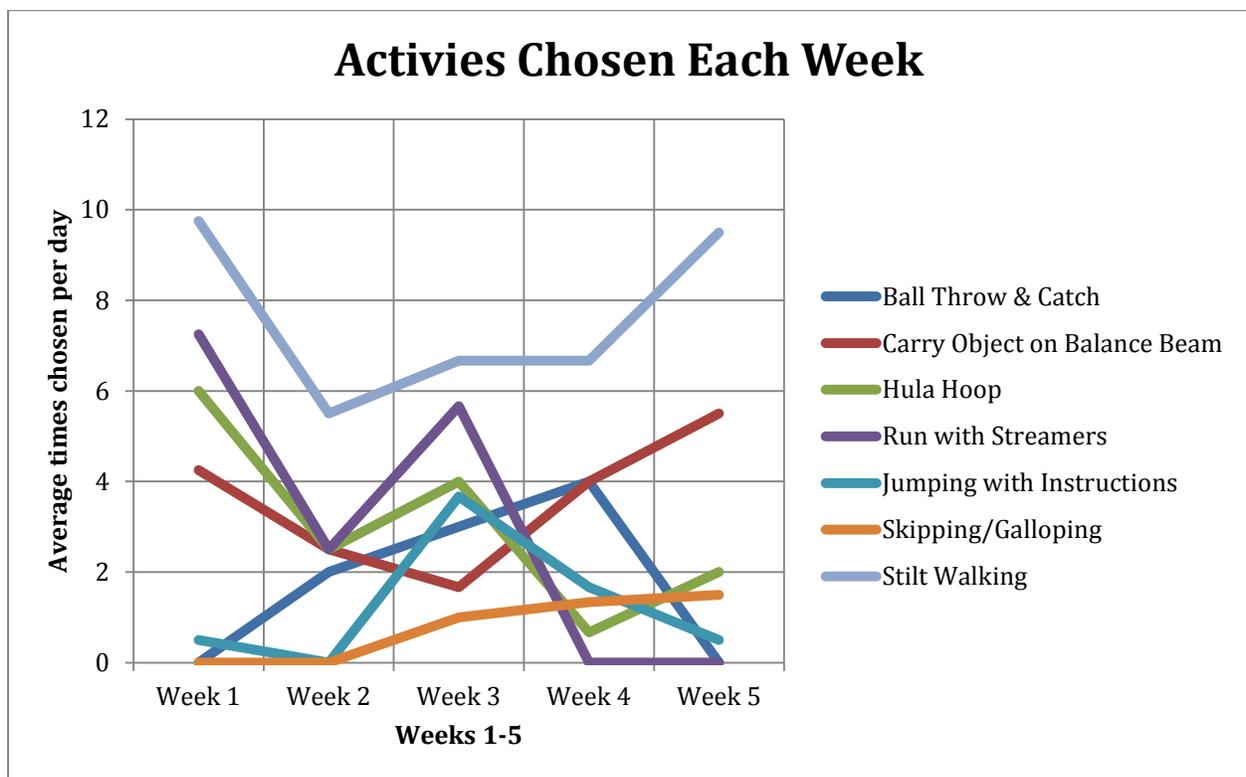


Figure 4: Activities Chosen Each Week

According to Fuchs and Craft (2012), the ability to learn to balance is considered a Fundamental Movement (p. 29) helping to develop stability in the body. It seemed the activities centered on balance and careful movement were the most likely to create a feeling of calm after use. After reviewing the data, I am not confident this is the result. When I created a data chart

with the most used material compared to observed behaviors, it was not clear whether this was the case (see Figure 5).

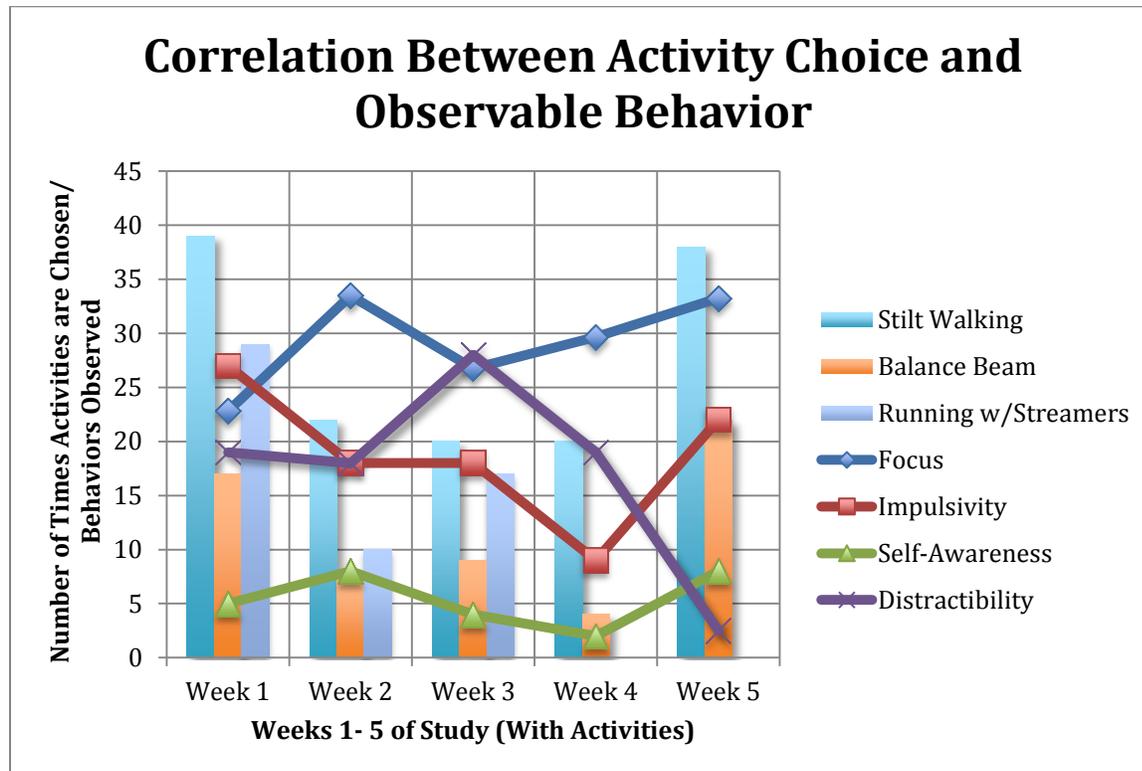


Figure 5: Correlation Between Activity Usage and Observable Behaviors

Anecdotally, it appeared to me the near constant use of the bucket stilts created calm in the environment. When I created a graph of the behaviors that would be considered undesirable, this does not seem to be proven. Although impulsive behaviors decreased somewhat during the study, it was not as significant as I would have predicted. A fascinating result is a spike in Distractibility in Week 3. I suspect one reason may be because we had Wednesday off for the observation of a holiday, and when the children returned to school on Thursday it was a very active and unproductive morning. Another interesting bit of information is the apparent downturn in the use of the materials in week three as well, with the exception of Running with Streamers.

Another component of the project included interviews with the children. At first I had a discussion at a group time and asked questions regarding the movement lessons. Later I sat with them individually to ask what was their favorite movement lesson and why they liked it. I wrote the responses for them on story paper and encouraged the ones that can write to do so. I requested they draw themselves using their favorite movement lesson followed by the interview questions. Some of the children declined the offer of drawing, usually telling me they couldn't, others were willing, and a few were excited. The older children were more able to articulate their feelings about the lessons, but the majority of the responses were the activities made them feel "happy," and that the materials were "fun." I was hesitant to suggest other words although I sometimes do when we work on emotional literacy. I was concerned that if I did suggest other words that this would alter the final results. At times, some children would respond the material made them feel "strong," but only after I asked the questions in a variety of ways.

### **Action Plan**

The research project as implemented had a marginally positive experience for the children. All of the children showed interest in participation with the materials used in the action research project and expressed satisfaction from using the movement activities. The children continued to show interest in using the materials on a daily basis. My observations show some improvement in the areas of distractibility and self-awareness. The ability to focus remained robust or increased for the majority of the children. It appeared the children began to feel calmer after using the materials that required them to focus on their movements. The continued interest alone is a benefit for the children as this allows them to take movement breaks during the morning work session as a way to expend energy or regain a sense of calm through bodily movement. Being more active throughout the day has many benefits for children, making them

calmer and more focused. Body breaks throughout the day are beneficial to children with Sensory Processing issues as well as typical children. Body breaks appear to be a positive way for the children to expend excess energy that might hinder them from being attentive and calm during their time at school. However, I did not observe a definitive improvement in the overall calm I had predicted. These results may be due to several reasons.

One element was the study was short in duration. If the study has lasted several months as opposed to several weeks, there might have been more improvement. I found that as with any activity in the classroom, extensions and variations were needed to sustain the children's interest. For example, with the balance beam, the addition of different weighted objects such as a heavy beanbag or a weighted vest gave the activity new points of interest for the children. Having different types of bucket stilts that were more challenging, with smaller diameter buckets that were higher added a heightened skill level that kept the children challenged. At the end of the project, I had changed the materials slightly. I believe if there were a longer period for intervention and observation, continuing to add challenge and diversity to the activities would have created more behavioral changes.

Additionally, the movement lessons were, at first, a distraction from being inside the classroom. The lessons were located in a garden area that became so crowded it was necessary to facilitate a method to limit the number of children who were in the area to four. Although this limitation needed adult supervision at first, after several days the children were able to follow the new guideline successfully. I believe there would have been more improvement if the materials were available inside the classroom as well as in the garden or playground, giving them less of a feeling of specialness. According to Fuchs and Craft (2012), "behavioral expectations are the same for a movement lesson as for any other lesson given in a classroom" and the expectation to

focus would be similar to any other Montessori material (p. 15). It seemed I needed more faith the children would use the materials in a manner that is respectful of the other children's needs.

Additional constraints on the study were the majority of the students in the class were new to Montessori or this classroom and had a minimal number of normalized children to look to as models. For several reasons, the number of returning children to this class was small, so the role models for the class were limited to five. Of those returning, a small number have either sensory or behavioral issues. The concept of body breaks was not new to the returning group, but the newer children needed more guidance about what was an acceptable amount of time spent on these activities.

The ability to focus and be able to tune out distractions is important for the overall success of the children as they continue to develop. I believe there should be ways to allow them to develop this skill through activities that are designed to give their bodies movement breaks throughout the work period. After the completion of the six weeks of the movement curriculum the ability to avoid distractions improved slightly, but the biggest improvement was in focus. Overall this action project was successful as implemented. Although there are some changes I would make, such as the introduction of other types of focused movement activities such as yoga or mindfulness, it was a worthwhile investigation. I believe it would be beneficial for other early childhood classrooms as well. The data shows purposeful focused movement can positively enhance a classroom experience for young children.

### References

- Cossentino, J. (2010). Following all the children: early intervention and Montessori. *Montessori Life*, 22 (4), 38-45.
- Diamond, A. & Lee, K. (2011). Interventions shown to aid executive function development in children 4 to 12 years old. *Science*, 333, 959-964.
- Fuchs, M. A. & Craft, D. H. (2012). *Movement matters. A movement album for Montessori early childhood programs*. Cortland NY: Active Play Books.
- Gordon, E. S., Tucker, P., Burke, S. M., & Carron, A. V. (2013). Effectiveness of physical activity interventions for preschoolers: a meta-analysis. *Research Quarterly For Exercise And Sport*, 84(3), 287-294.
- Isbell, C. & Isbell, R. (2007). *Sensory integration a guide for preschool teachers*. Lewisville NC: Gryphon House.
- Lillard, A. S. (2005). *Montessori The science behind the genius*. New York, NY: Oxford.
- Montessori, M. (1995). *The absorbent mind*. New York, NY: Holt Paperbacks.
- Pickering, J. S. (2003). Montessori and learning differences. *Montessori Life*, 15(4).  
Retrieved from <http://search.proquest.com.pearl.stkate.edu/docview/219926635?pq-origsite=summon>
- Pickering, J. S. (2008). Montessorians helping children who learn differently. *NAMTA Journal*, 33(2), 77-99.
- Wang, J. H-T. (2004). A study on gross motor skills of preschool children. *Journal of Research in Childhood Education*, 19(1), 32-43.

Woods, C. (2000a.). "Back to basics" for the Montessorian: the practical life foundation.

*Montessori Life*, V12, n1, Winter (38-41).

Woods, C. (2000b.). The Cycle of Movement. *Montessori Life*, V12, n4, Fall (21-23)

## Appendix A

## Activity List

The Movement shelf will contain activities that can be taken into the outdoor work area, or if the activity is for a small group then to the playground.

Adapted from:

Fuchs, M. A. & Craft, D. H. (2012). *Movement matters. A movement album for Montessori early childhood programs*. Cortland NY: Active Play Books.

Activities Provided:

**Ball throwing and catching lesson** (individual or small group lesson)

Aims: Throwing and catching a ball, coordination and focus.

Materials: basket with balls of varying sizes

Presentation: Ask children to make a circle and practice throwing to each child and ask them to throw it back again.

**Carrying an object on the balance beam** (small group or individual activity)

Aims: Practicing balance and locomotor skills while holding an object, coordination and focus.

Materials: Two baskets, one with various objects of differing sizes and weights.

Presentation: Take baskets to balance beam and set up with one basket at each end. Children practice carrying objects while balancing and walking on the beam. Put object into the empty basket at the end.

Questions to ask the children: Did you stay on the beam? Were some objects harder to carry than others? Did you drop the objects?

**Hopping into hula-hoops** (small group lesson)

Aims: Balance, coordination and focus.

Materials: Hula-hoops, 2 per child, beanbags.

Presentation: Each child will have two hula-hoops and some beanbags. They will stand in one hoop and practice throwing beanbags into the other, and then hop into the opposite hoop and retrieve the beanbags.

Variations: Two or more children share the hoops and hop into several hoops in a sequence.

**Running with streamers** (either small group or large group lesson)

Aims: Vigorous activity to elevate the heart rate, fundamental movement of running.

Materials: Cloth or paper streamers around 4-6 feet long or gymnastic streamers.

Presentation: Hold the streamer in one hand and run. Children will have their own streamers and join in.

**Jumping practice while listening to instructions** (small group lesson)

Aims: Practice jumping and listening skills.

Materials: Chalk to make circles or area for each child.

Presentation: After each child has a personal space, ask the children to stand in the circle (or what ever shape is chosen). Say “IN” or “OUT” in a random sequence and the children must listen carefully and follow the instructions.

Variations: For some children this should be done individually. This can also be done with the whole group at a circle time or in a gymnasium and can be made more challenging through more complicated instructions (if you are wearing blue, if you are a boy, if you are four years old, etc.).

**Skipping/galloping lesson** (small group or larger group lesson)

Aims: Vigorous activity to elevate and practice fundamental skills of skipping and galloping.

Presentation: Demonstrate the movement of skipping (march, hop, march, hop) and galloping, (one foot forward and hop).

**Stilt walking with short stilts** (individual lesson)

Aims: Stability, balance and coordination

Materials: Stilt blocks (small blocks with ropes for handles)

Presentation: Review the concept of balance, demonstrate how to walk with one stilt first, and then add the other.

Appendix B

BEHAVIORAL TALLY SHEET

DATE	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
<b>IMPULSIVITY</b>					
time:					
time:					
time:					
<b>DISTRACTIBILITY</b>					
time:					
time:					
time:					
<b>SELF-AWARENESS</b>					
time:					
time:					
time:					
<b>FOCUS</b>					
time:					
time:					
time:					
<b>NOTES</b>					

Appendix C

ACTIVITIES TALLY SHEET

DATE	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
Ball throw & catch					
Carry object on balance beam					
Hula Hoop					
Run w/ streamers					
Jumping w/ instructions					
Skipping/galloping					
Stilt walking					

Notes

## Appendix D

Data Source – Interview: Student  
Attitudes About Using the Movement Activities

The questions asked in the dialog were:

Teacher:( explaining to student), “I’m going to ask you some questions about the outside games.”

“Which activity did you like the best?”

“How did this activity make you feel?”

“Did you feel different after you used the activity?”

“Did you feel calmer after you used the activity?”

“Are you happy or sad when using the exercise?” (Show them a happy face or a sad face pointing at face)

“If you don’t know how you felt, point the face that has a straight mouth.”

(Point to Face)



The final question was, “Would you like to draw a picture of yourself using your favorite exercise?”