

A Grant Proposal to Study the Benefits of Ball

Chairs for Students that are

Kinesthetic Learners

by

Charlotte A. Winkler

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**Dr. James
Lehmann**

Digitally signed by Dr. James
Lehmann
DN: cn=Dr. James Lehmann, o,
ou,
email=lehmannmath@yahoo.
com, c=US
Date: 2010.04.30 08:34:00
-07'00'

Dr. James Lehmann

The Graduate School

University of Wisconsin-Stout

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**The Graduate School
University of Wisconsin-Stout
Menomonie, WI**

Author: Winkler, Charlotte A.

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Abstract

Kinesthetic learners move their bodies in order to learn something new. These learners have a hard time sitting in a chair for an extended period of time. In the past some of these students have been labeled as hyperactive. Others have been called difficult to teach. The ball chair project is intended to help six-year-old first grade kinesthetic learners be more focused during writing time. It is also predicted that a first grade kinesthetic writer will produce higher quality and increased quantity of writing. Student writing samples will be evaluated and compared for quality and quantity. The grant funding will be used to purchase a proper fitting ball chair for the teacher and each student in the classroom. The funding will also be used for teacher and student training on how to properly use the ball chairs in the classroom. Data from this study will be disseminated to local and state agencies in Wisconsin and district personnel. The grant proposal outcomes hope to show an improvement of the quality and quantity of

writing produced by first grade kinesthetic learners using ball chairs properly in the classroom setting.

**The Graduate School
University of Wisconsin-Stout
Menomonie, WI**

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Chapter I: Introduction

Statement of the Problem

A problem in education exists, not every first grade child is successful in writers' workshop. In an ideal elementary classroom every student is successful in obtaining a quality education. Just as six-year-old first grade students have different personalities, they also have different learning styles that need to be taken into account when planning lessons. Students learn by: verbal/linguistic, musical/rhythmic, logical/mathematical, visual/spatial, bodily/kinesthetic, intrapersonal, and interpersonal intelligences (Chapman, 1993). According to Checkley (1997), teachers need to help students use a combination of their intelligences to be successful in school and learn what society believes they need to learn (as cited in Sweet, 1998). Six-year-old first grade students are expected to write for a half hour to one hour block of time. Unfortunately, not all students are successful during our writing time without accommodating for their different learning styles. It is very hard for six-year-old first grade students to sit still and write for that length of time.

The theory of multiple intelligences comes from the work of Howard Gardner which he published in 1983 (Phipps & Schiller, 2002). The theory of multiple intelligences believes we possess all eight intelligences; some are just stronger than others. Torff (1996) stated we are all smart in our own way; we all have our own preferences, talents, and intelligences. The bodily/kinesthetic intelligence is based on the control of one's bodily motions.

Children learn in many different ways (Torff, 1996). Every child has a different and unique learning style. A kinesthetic learner is a learner that learns best when they are allowed to move around and engage their small and large muscle groups (Hutton, 2008). Kinesthetic learners have a lack of focus and the inability to sit or stand still for a long period of time. These

students learn by touching things and moving around the room. They are hands on learners.

Kinesthetic learners have a hard time sitting in a chair for an extended period of time. In the past some of these students have been labeled as hyperactive. Others have been called difficult to teach. Kinesthetic learners need to touch, feel, and handle things (Hutton, 2008). These are the children that will not want to see a demonstration; they will jump right into an activity without asking how to do it. These learners may tap their foot and pencil when working. They like to touch the people they are talking to. Kinesthetic learners enjoy physical activity; they like to move around a lot.

Hutton (2008) stated Kinesthetic learners move their bodies in order to learn something new. These students often feel their way of learning is not good because they cannot sit and do the work. Linksman (2007) stated there is a fine line between Attention Deficit Hyperactivity Disorder (ADHD) and kinesthetic learners. Unfortunately, some kinesthetic learners have been labeled with ADHD. Teachers, parents and others are quick to put active children on Ritalin without checking into other options (Linksman, 2007). Kinesthetic learners find it stressful to sit, look, and listen for long periods of time. All these students need is to use their muscles when learning. Once kinesthetic learners are given the opportunity to engage in gross motor activities, their ADHD like behavior disappears. Without any classroom accommodations for kinesthetic learners we are setting them up to fail.

A six-year-old first grade child is going through a rapid physical growth and is engaged in rapid physical activity (Wood, 2003). A first grade classroom with six-year-olds is a busy, noisy place. Six-year-olds enjoy the out of doors and gym. In the classroom they often fall backwards out of chairs. Fliess (2008) stated most children start out as kinesthetic learners. As the child turns seven or eight, his or her true learning style comes into focus.

Teachers need to make accommodations so all children are successful in school, including kinesthetic learners. Kinesthetic learners acquire knowledge better when movement is involved (Hutton, 2008). A teacher of six-year-olds needs to allow for activity in the classroom, Fliess (2008). The use of ball chairs gives children doing sedentary tasks an active instructional environment (Witt, 2001). Through the use of ball chairs kinesthetic learners will have an outlet.

The purpose of this study is to investigate the use of ball chairs and the help they give kinesthetic learners to succeed at school specifically in writing, which is a sedentary activity. Improving our writing scores at Meadowview elementary school is our building goal. Our goal is to help all students succeed in writing. By using the right size ball and using a ball with storage legs, it is hypothesized students will increase their ability to focus while performing in the classroom and will thus benefit academically.

Significance Statement

Six-year-old first graders think of school work as spontaneous play (Wood, 1994). During a sedentary writing block of time kinesthetic first graders need to have a way to move and still be productive. Our Meadowview elementary school building goal is to improve writing skills. Teachers at Meadowview investigated and use the Six Trait Writing process along with the Lucy Calkins writing research in their daily writing instruction (2007). The staff at Meadowview implemented common writing assessments to log the progress made by students on their writing responses. The staff members also participated in the collection of data to look at our achievement or lack of it to set our building goal. Writing response has been an area our school needs to work on according to the test results from the standardized tests. With better writing skills we predict our test scores will go up on our standardized tests. The ball chair project will help six-year-old first grade kinesthetic learners produce quality writing during our

half hour to hour long writing block. They will also stay on task and produce a larger quantity of writing. Kinesthetic learners will focus on their writing and cause fewer disruptions to others in the room during our writing time. Kinesthetic learners will also enjoy writing because they have an outlet using the ball chairs.

Assumptions

By providing quality writing experiences in first grade, students will continue to enjoy and produce quality writing throughout their lives. Ball chairs will improve the endurance of sitting and postural muscles for students (Illi, 1994). Teachers seek to provide more equitable opportunities for learning and succeeding in school (Westerhold, 1998). Ball chairs will provide teachers the opportunities to make writing a successful learning experience for kinesthetic learners. An added bonus to using ball chairs will be the improved blood circulation which will improve the effectiveness of all the organ systems, especially the brain (Illi, 1994). The use of ball chairs by six-year old first graders will promote active learning in first grade.

Definition of Terms

Attention Deficit Disorder. Barkley (1995) stated attention deficit disorder is a developmental disorder of self control. Another label for ADD is attention deficit hyperactivity disorder or ADHD. Attention Deficit Disorder is not something children will grow out of. It is not caused by a parent's failure to control or discipline their child. Hallowell and Ratey (1994) stated that ADD is a neurobiological malfunctioning of the brain. Over a lifetime there are some environmental factors that do influence the course of ADD, but the characteristic problems people face come from the biology of the brain. Children with ADD have no outward signs that say they have something is physically wrong with them (Barkley, 1995). People cannot see that something is wrong with the child's central nervous system.

Barkley (1995) stated children with ADD have problems with attention span, impulse control, and activity level. The child with ADD may get bored or lose interest in sedentary activities in the classroom faster than their peers without ADD. Attention Deficit Disorder children have an inability to persist with a boring task for a significant amount of time. The ADD child will find a short cut when performing boring or unpleasant tasks. They do better with breaking the activity up into smaller segments so the child can take frequent breaks. Attention Deficit Disorder children seem to be drawn to activities that are the most rewarding and fun. The ADD child is the one that will blurt out answers before the questions have been finished. They want things now. They have trouble waiting for anything. Attention Deficit Disorder children are greater risk takers than their peers. They do not see in advance the harm that could follow an action. Attention Deficit Disorder children are more active than their peers. These are the children that are always on the go. A child's behavior with ADD occurs too quickly, and forcefully. Children with ADD have problems controlling their impulses and regulating their behavior.

Autism. Kluth (2003) stated Autism is difficult to define because there are no two children with Autism alike. Some students with Autism welcome touch while others find it very painful. Some children with Autism like interaction and social situations, while other need their space and time alone. Some Autistic children cannot use speech reliably and others are extremely talkative. Students with Autism have a wide variety of skills, abilities, interests, gifts, talents, and needs.

According to Kluth (2003) Autism is a spectrum disorder that typically appears before the child reaches the age of three. It is four or five times more likely to occur in boys than in

girls. Asperger's Syndrome is a label given to some children on the Autism spectrum. Children with the Asperger's label often times experience communication differences.

Kluth (2003) stated there are no two children alike with Autism, but they do share some characteristics. Children with Autism have some movement differences. They may have excessive or atypical movement. Sometimes they have the loss of typical movement. Movement differences may be in the form of an uneven gait when they walk. The Autistic child may engage in excessive movements like rocking, hand flapping, or pacing. They may also have trouble with speech.

Autistic children also have sensory differences (Kluth, 2003). Their sense of hearing, touch, smell, sight, or taste may be more or less sensitive. Some children may like some forms of touch while others will cry out in pain at the slightest touch. Some students with sensitive hearing may be able to hear the buzzing of florescent lights and the conversations of people in another room. Teachers in the classroom need to watch for sensory issues Autistic children may have in the classroom and change the environment if possible.

According to Kluth (2003) some children with Autism may find social interaction painful while others crave some interaction with their peers. An Autistic child may have a hard time figuring out the rules of conversation. This causes them stress, so they find it easier to avoid social interaction. Some social struggles come from others not understanding the Autistic child.

Children with Autism have learning differences (Kluth, 2003). Teachers need to understand that some students cannot perform because of the way the information was presented. Sometimes it is the way the student processed the material and at other times it may be the way it was heard. Some children with Autism may have significant problems with memory while others

may have a deep interest or fascination with a topic and can tell you anything you want to know about their special interest.

Ball Chairs. There are many different names for ball chairs. Ball chairs can be called; Swiss ball, Fit Ball, therapy ball, and stability ball (Witt, 2001). Thor (2007) stated exercise balls are replacing desk-chairs in classrooms. Roznik (2008) called ball chairs Orbs. They are brightly colored rubber exercise balls that are replacing classroom chairs. An exercise ball or stability ball with feet as Witt (2007) stated is a plastic ball made of the highest quality Italian resin material. The balls are latex-free and burst resistant. Stability balls or ball chairs are thick, durable and firm. Ball chairs come with or without feet. The feet offer added stability and easy storage. A ball chair with feet will stay in place during the day when not in use. The legs on ball chairs also help keep the ball in place when putting them on top of desks and tables for storage. Ball chairs come in different sizes. It is important the child is sitting on top of the ball with his/her feet flat on the floor. The child's hips should be slightly higher than the knees. A child must be properly measured to assure the right fit.

Kinesthetic Learners. We all have our own preferences, talents, and intelligences; Torff (1996) stated we are all smart in our own way. Children in the classroom are going to learn in different ways. There are eight multiple intelligences children learn by, body/kinesthetic being one of them. The theory of multiple intelligences comes from the work of Howard Gardner which he published in 1983, Phipps and Schiller (2002). Before Gardner's proposal of seven intelligences, now eight, student intelligence was measured by intelligence tests. Intelligence tests only measure ones mathematical and linguistic skills. The theory of multiple intelligences believes we possess all eight intelligences; some are just stronger than others.

Kinesthetic learners need to touch, feel, and handle things (Hutton, 2008). These are the children that will not want to see a demonstration; they will jump right into an activity without asking how to do it. Kinesthetic learners enjoy physical activity; they like to move around a lot. These learners may tap their foot and pencil when working. They like to touch the people they are talking to. Kinesthetic learners move their bodies in order to learn something new. These students often feel their way of learning is not good because they cannot sit and do the work. Linksman (2007) stated there is a fine line between Attention Deficit Hyperactivity Disorder, (ADHD) and kinesthetic learners, unfortunately some kinesthetic learners have been labeled with ADHD. Once kinesthetic learners are given the opportunity to engage in gross motor activities their ADHD like behavior disappears. Teachers, parents and others are quick to put active children on Ritalin without checking into other options. All these students need is to use their muscles when learning. Kinesthetic learners find it stressful to sit, look, and listen for long periods of time.

Lucy Calkins Writing. Calkins (2003) stated writing needs to be regarded as one of the basics in the classroom. Writing needs to be viewed as a crucial tool for learning to read and to think across every subject area. When teaching writing kindergarten through second grade teachers need to devote 45 minutes to one hour a day to writing instruction. Writing instruction begins with a ten minute mini lesson in which the teacher uses direct and explicit instruction. After the mini lesson students work in highly structured yet responsive environments in order to draft and revise their writing. The students writing should incorporate the instruction they just received through the mini lesson. While students are writing teachers confer with their students individually and in small groups. Midway through the writing time teachers may call the whole

class together for a second teaching point. When the writing time is done there is an opportunity for follow up with a share about the topic from the day's mini lesson.

Calkins (2003) stated in a well rounded literacy program children need to be read to several times a day. It is also important that time is allotted for children to read books that they can read with confidence, ease, and comprehension. The classroom teacher also needs to provide phonics and spelling lessons so children can learn to build words and take words apart. This helps the child become resourceful word solvers.

Teaching writing throughout the year it is an ongoing process where the structures have been set up in the beginning of the year (Calkins, 2003). These structures provide a continuity of daily practice and coaching that allows learners to exercise and improve their writing skills. Over time students will successfully tackle new and increasingly difficult challenges.

Calkins (2003) stated in the fall the writing time is used to launch the writing workshop. Writers are given and shown where the materials they need to be good writers are located and kept. Writers also need to understand what the writing time should look and sound like. Consistent management of the writing time is crucial for the productivity of the students. Students start out writing personal narratives, or small moment stories. As the year progresses students are encouraged to write so others can read their stories. The writing process also includes the process of learning revision. When a child has finished revising his/her story a writer's celebration is held. A writing celebration is a culminating activity to show others what was learned throughout the writing process.

Six Traits Writing. Spandel (2002) stated six trait writing is based on the idea that students who become strong self assessors are better writers and revisers. Writers will gain confidence from knowing writers language and having options for revision. The six trait writing

model of instruction and assessment was developed in the Beaverton, Oregon, School District. Teachers in kindergarten through college level have used this model of writing instruction. The traits of writing have been around for a long time. What is new is using consistent language with students during the writing process.

When teaching writing at the lower elementary level it is mostly about teaching language (Spandel, 2002). Teachers are providing students with a writer's vocabulary for thinking, speaking and working like writers. McMahon, Warrick, and Bellamy (2005) stated teachers need to use the same language when teaching every lesson. The six main ideas in six trait writing include ideas, organization, voice, word choice, sentence fluency and conventions. Ideas are the content of the piece and the main theme together with all the details that form the writing piece. Strong writers always include details that are clear, interesting, and not obvious to the reader. Organization is the framework that holds things together. A writing piece with good organization stays focused on one main idea. The details are written in a manner that is easy for the reader to follow. Voice in a writing piece is unique to each individual writer. A writer's voice is the feeling, wit, and life the writer puts into a writing piece. Good word choice is important in a writing piece because it paints pictures in a readers mind. In good descriptive writing writers use rich, colorful, and precise language to communicate with the reader. Writers can expand on an idea with the choice of words used in the writing piece. Sentence fluency in a writing piece is the rhythm and flow of the language used. Fluent writing is free of awkward patterns that make the writing piece hard to read. A fluently written story makes reading it aloud a pleasure. When writing conventions covers, spelling, punctuation, grammar, paragraphing, and capitalization. Conventions grew out of a need to make text easier to read.

Writers Workshop. Gillet and Beverly (2001) stated teaching writing to children is very important. Children need to write clearly, precisely, and powerfully. For children to produce high quality writing teachers must supply them with high quality writing instruction. Teachers need to show students how to break the writing process down into manageable parts.

Gillet and Beverly (2001) stated process writing values the process as well as the product of writing. Children develop as writers by starting out in the toddler years making marks on paper. During the elementary childhood years children become writers by developing writing skills through many writing experiences. At this stage children learn how to develop authentic reasons to write. Next children need to improve the quality of the writing piece by learning how to revise what they have written. During the editing stage children polish their writing piece by correcting errors, and making sentence improvements. Writers also learn to help each other out in this stage of their writing. The last stage of writing is the publishing piece. After students have revised and edited their writing piece they share the story with others. The students may share their writing piece orally and then put it on display for others to look at and read.

Writers need an authentic reason to write (Gillet & Beverly, 2001). When children start writing they choose their own topic. Children feel more comfortable writing about things they know. High quality writing instruction provides children with the opportunity to write a lot. Writing is a job; it takes time to develop into a good writer. Writers' workshop needs to be at a predictable time each day. When children know that a particular time each day is set aside for writing they can begin to plan what they will write about. Writers need other writers to communicate with. Children learn from each other when they help each other out. By developing a classroom with a community of writer's children can support each other throughout the writing process. All writers need assistance at some time. Teachers are expected to conference with

children to see where they are at in their writing piece and offer help and suggestions on how the child can improve. Writers also need a consistent place to keep their writing pieces. Children also need easy access to writing supplies in the classroom and the ability to move about to get the supplies they need.

Chapter II: Literature Review

History of Classroom Chairs

Saarni, Nygrd, Rimpel, Nummi, and Kaukiainen (2007) stated work stations and postures of school children have been a neglected area of research. The growing use of technology has lead to an increase in sedentary lifestyles of school children. Children sit for most of the day in a stooped sitting position during the school day then go home and sit during their free time watching television and playing video games. Pynt (2009) stated in 1892 a Swiss inventor Caspar Schindler took out a United States patent for a school seat. Schindler had already taken out the patent in Europe and Britain. His chair design had a saddle seat that was adjustable in height and incline. The chair also had an adjustable back, foot and armrests. When looking at health reasons this chair design excels any seating seen in most schools today. People opposed this chair design because comfort represented self-indulgence. Moralists warned against the immorality of being too comfortable. Comfort was given up to build character in students by enduring discomfort while sitting in chairs throughout the day. Saarni, Nygard, Kaukiainen, and Rimpela (2007) stated even today most school workstations come in a one size fits all model. With the enormous variance in children's stature student workstations of just one size fits all is not appropriate.

In Italy in 1963 an Italian engineer, Acquilino Cosani first manufactured the stability ball or Swiss ball as it was nicknamed by United States therapists to be used as a toy (Witt, 2001). Acquilino Cosani sold his large brightly colored balls all over Europe. Over the next few years physical therapists started using the balls as a therapeutic tool. The balls were introduced to the United States by Joanne Posner-Mayer, developer of Fit Ball USA and owner of Ball Dynamics International, Inc. At first the balls were used for individuals who suffered some type of injury or

another. Posner-Mayer realized the stability ball could be used for healthy people as well. Now the stability ball is used in the fitness industry, in homes of people of all ages and abilities, and in classrooms.

Health Benefits of Ball Chairs

During the last few years research has shown an increase in neck, shoulder, and lower back pain (Saarni, Nygard, Kaukiainen & Rimpela, 2007). An increase in sitting in a stooped, static or otherwise awkward posture at computers and a sedentary lifestyle has led to an increase in stress to spinal structures. A lot of desks and chairs of schoolchildren are too low causing health issues. Sustained sitting in slouched postures for periods of time, even 10 minutes can cause an inflammation to the spinal tissue that can cause back muscle spasms, loss of stability of the spine, cumulative trauma and pain (Pynt, 2009).

According to Saarni, Nygard, Rimpela, Nummi, and Kaukiainen (2007) children need to sit in an upright, neutral posture. Fitting school furniture where desks are at least one half and chairs one third of the students' height would exert the least load on spinal structures. Mandal (2008) stated work chairs in schools have been designed for sitting upright, with the hip, knees and ankles all at right angles. It was believed that people sat with a 90 degree bending of the hip joint preserved the concavity of the back. This erect posture looks nice, but it is impossible to sit this way for extended periods of time. This type of sitting is based on morals and discipline from the days of Queen Victoria. By sitting this way more than a few minutes results in fatigue, discomfort and poor posture. Children will often tilt forward on the legs of their chair to relieve back pressure. By tilting their chairs forward children allow their front and back muscles to relax.

Witt (2001) stated researchers have realized that student classroom chairs are not ideal in promoting a lifestyle of healthy posture. Ball chairs encourage proper posture and spinal health at a young age which would set healthy lifestyle habits for life. The ball chair has been shown to improve flexibility, strength, range of motion and posture. When sitting on a ball chair all the child's muscles are working together to maintain their balance. A test in Switzerland showed that hyperactive children sitting on balls were calmer and could focus for longer periods of time. Children could also concentrate better which lead to a better understanding of the subject material. Disorganized children developed a better sense of organization and handwriting skills improved for children with poor penmanship. The use of a ball chair in the classroom would greatly benefit children physically, which in turn would aid them cognitively. Therapists felt that the students' sense of self esteem increased due to their positive experience with the ball chair.

According to Kilbourne (2009) there is scientific knowledge that exercise benefits teaching and learning. Children are supposed to be active, they move around. A child's ability to pay attention increases when they are given the opportunity to move. According to Pytel (2007), when using exercise balls for chairs in the classroom students with attention problems could focus better (as cited in Kilbourne, 2009). Children that require extra movement could do so in a quiet manner without disturbing other students. More students become actively engaged in learning when sitting on ball chairs (Ranallo, 2010). Kilbourne (2009) stated children gain a greater sense of balance because the body must constantly change its center of gravity in order to remain balanced and still. A child's core strength is improved when sitting on a ball chair because their postural, abdominal, gluteus and leg muscles have to make constant adjustments to maintain balance on the ball chair. Improved posture and body alignment accrue when sitting on a ball chair because it is very difficult and uncomfortable to slouch on an exercise ball. When

students sit on ball chairs in the classroom an enhanced level of excitement occurs because the students enjoy the ball chairs.

Enjoyment of Ball Chairs

According to Ranallo (2010) students in Tinder's third grade class said they liked the movement the ball chairs provided when working at a desk. Some students like bouncing on the balls a little, only small bounces are allowed. Rosenkrans (2008) stated in Tuxen's third grade class the students where a part of creating a set of rules that the students must follow when sitting on a ball chair. If the rules are not followed the consequence is the child has to sit in their old classroom chair.

Rosenkrans (2008) also stated students in Tuxen's class said they can do some exercising on the ball chairs and the ball chairs help with their posture. Gamache-Hulsmans (2007) stated students said they feel better when sitting on ball chairs. Students also felt more comfortable and said their backs did not hurt when sitting. The ball chairs are soft compared to regular classroom seats and are more fun to sit on. Witt (2001) stated students in her study said the ball chairs are awesome. The ball chairs make me sit up straighter, which improves my back muscles because when students slouch their back hurts. When students are sitting up they can concentrate better and therefore their work improves. Schilling, Washington, Billingsley, and Deitz (2003) stated some children said they could keep their brain active even when they were bored. Some students thought they could get their work done better. Work is a lot more fun when you are sitting on a ball chair.

Kinesthetic Learners

Fasko (1992) stated there are basic principles of learning, motivation, and effective instruction that apply to all learners. Learners have a unique set of abilities and talents they also

differ in their learning style and strategies. Learners acquire different preferences for how they learn best. Even after knowing students learn differently most schools teach and test to the linguistic and mathematical intelligences. It is important to expose students to classroom activities in all seven competences so inherent strengths can be used in the learning process.

Burke and Burke-Samide (2004) stated in every classroom there are students that need to learn in an environment that is different from the environment other students need to learn in. Students react differently to the instructional environment they are exposed to. When teachers alter the environment they give students the opportunity to work in formal and informal areas of the classroom. Students should not be expected to change their environmental preferences or to learn regardless of them. Changes in the classroom environment will improve students' academic performance. One way to change the environment is to provide informal comfortable seating. By altering the environment a student's attention span, attitudes, and ability to learn can improve.

A well structured classroom may prevent some students from learning (Burke & Burke-Samide, 2004). For students to get the most out of their education it is important lessons as well as environment appeal to their particular learning style (Tillman, 2001). According to Linksman (2007) kinesthetic learners need movement and action to learn. It is hard for kinesthetic learners to look and listen for extended periods of time. When kinesthetic learners are required to sit still for sedentary learning activities they will find a way to move their bodies. Kinesthetic learners may get up to go to the bathroom, drop things, wiggle in their seats, lean back in their chairs, and tap their pencils. When these activities are not acceptable in the classroom these students may start to misbehave. Some kinesthetic learners may do poorly academically because teachers are not providing them with lessons and a learning environment that is active. When reading and

writing is taught in the primary grades instruction involves a lot of teacher talking and visual displays. Teachers then turn to remedial instruction for these students. A lot of remedial instruction uses the same types of techniques as in the classroom. Kinesthetic learners need to be provided with an active way to learn in all academic areas. They may not need medication so much as innovative teaching methods.

Attention Deficit Hyperactivity Disorder

Linksman (2007) stated often kinesthetic learners are labeled by parents and teachers as Attention Deficit Hyperactivity Disorder (ADHD) students. Quinn and Stern (2001) stated the only way to know if a student has ADHD is to consult a professional who is an expert in this area. Everyone has some attention problems some of the time and are not ADHD. They also stated that not all students with attention problems are all the same. Experts who work with attention disorders have names for the different types depending on what characteristics the student is showing. Some ADHD students are not able to keep still or stop themselves from doing something even when they know they should. Other students may have trouble paying attention or have trouble focusing on just one thing at a time. Some ADHD students have trouble keeping still or thinking before acting. Students with attention problems may also be disorganized; they have trouble keeping track of things and have trouble learning in school.

According to Quinn and Stern (2001) there are over 2.5 million school aged children in the United States thought to have ADHD. In a classroom of 20 students you might have one or two with some form of ADHD. Both male and female students can have ADHD. When observing a classroom it may not be easy to pin point these students, they look just like everyone else.

The hyperactive child is the one that has difficulty keeping still. They feel like they always have to be moving. For this child sitting still and working for any period of time at a sedentary activity is very frustrating. Schilling et al. (2003) stated students with ADHD preferred sitting on ball chairs rather than a regular classroom seat for comfort, writing, and productivity. The students also believed the ball chairs improved their writing, and increased their ability to listen and finish class work.

Children with ADHD often experience academic and sensory motor problems that make daily school activities a challenge. In order to help these children succeed in school, schools need to adapt the environment to meet the children's needs. Occupational therapy literature suggests the implementation of sensory modulation strategies in the classroom. One possible strategy is to use ball chairs for classroom seating. Children using ball chairs in the classroom appeared to improve in attention, prolonged periods of sitting and school performance. An over active child may be calmed by gently rocking on a ball chair. Shilling and Schwartz (2004) stated the ADHD child can gently move without moving furniture creating a calmer classroom atmosphere that is also quiet. After using ball chairs students seem to remain calmer and more focused for about 30 to 45 minutes (Schilling et al., 2003).

Autism Spectrum Disorder

Kluth (2003) stated a democratic education is a learning community that recognizes and validates the individuality and responsibility of each participant. Teachers need to embrace, support and understand all diverse groups of students in their classrooms. Teachers that work in inclusive classrooms are concerned about reaching and motivating all students in the classroom. The best teachers are knowledgeable about adapting materials, lessons, instructional arrangements, curriculum goals, and teaching strategies to meet all the academic and social

needs of students. Classroom teachers need to be more creative and supply interventions for all students in the classroom.

Providing appropriate seating in the classroom is an important part of classroom management (Kluth, 2003). As a teacher it is not pleasant to sit on a chair that does not fit or feel right. Teachers need to understand how it feels for children to sit on a hard plastic or metal chair where their feet do not touch the ground. For all children but especially children with Autism it is important for them to have comfortable classroom furniture for their success in school. Finding the appropriate seating is a matter of trial and error. The classroom should provide different seating options to improve the educational experiences of all learners.

Schilling and Schwartz (2004) stated autistic children exhibit a wide variety of behaviors and developmental levels. These children have difficulty with engagement, attention, and appropriate behavior in the classroom. These behaviors often interfere with a student's ability to participate in the mainstream classroom. The law states that Autistic children have a behavior intervention plan. Often these plans avoid or ignore the sensory issues that underlie the behavior. When sensory needs are met they can provide the nervous system with the stimuli that the body does require in attaining and maintaining an optimal state of arousal for learning. A ball chair for seating is one way to meet the sensory needs of a child with Autism to attain and maintain an optimal state of arousal.

Ball chairs provide children with Autism a healthy, safe and productive posture by giving the child an opportunity to both actively move and maintain an optimal arousal level (Schilling & Schwartz, 2004). When children are in hard rigid classroom seats they often assume extreme postures in their attempts to move around. Evidence has shown that children with Autism sitting on ball chairs have improved in both in seat behavior and work production. The children showed

an increase in engagement and a decrease in oppositional behavior. Ball chairs have also been found to be effective with children with varied ability levels. When the ball chairs were taken away an immediate decline in in-seat behavior accrued.

Schilling and Schwartz (2004) stated when using the ball chair the child's bouncing did not interfere with others in the classroom. The child stayed engaged in the activity while bouncing and would stop bouncing to perform more complex tasks. Children showed improvement in a variety of classroom settings and activities. The use of ball chairs is an example of how sensory processing theory can be put into effective practice in a classroom. The use of ball chairs in the classroom has created opportunities for high quality instruction to be effective for children with Autism. Ball chairs do not replace high quality instructional strategies but provide increased opportunities for teaching. Teachers and students both reported a preference for the use of ball chairs over traditional classroom chairs.

Chapter III: Project Goals and Objectives

This chapter will outline the projects goals and objectives. The purpose of this project is to meet the needs of kinesthetic learners during writing time in first grade. Today a problem in education exists, not every child is successful in writing during writers' workshop.

Produce More Writing

First grade kinesthetic learners will produce more writing during writing time. A majority of the grant money will be used to purchase each child the proper size ball chair to sit on. Every child that is using a ball chair will be trained on the proper use of the ball chair before they are allowed to use it. If students do not use the ball chair properly the ball chair will be taken away and the student will sit on a classroom chair. Students will be given a ten minute block of time to write as much as they can while sitting on the ball chair. The number of words written while sitting on the ball chair will be counted and compared to the number of words written while sitting on a regular classroom chair.

Improve Quality of Writing

First grade kinesthetic learners will improve the quality of their writing during writing time while sitting on ball chairs. Each child will be measured and given the proper size ball chair to sit on in the classroom. Each child will be trained on the proper use of the ball chair. If the child does not use the ball chair properly the ball chair will be taken away and the child will be given a standard classroom chair to sit on. Students will improve their letter formation when writing while sitting on the ball chair. Students will improve word spacing when writing for a ten minute time period. The stories written by students will have a beginning, middle, and end. Students will be surveyed on their perception of the academic benefits or lack of benefits while using a ball chair.

Survey Teachers on Ball Chairs

Teachers at Meadowview will be surveyed on the use of ball chairs in the classroom, see Appendix B. A teacher survey will be conducted on the use of ball chairs in the classroom before the project begins. Training for Meadowview teachers on the proper use and care of the ball chairs will occur before the chairs are used in the classroom. A post teacher survey will be conducted on the knowledge of ball chair use in the classroom after the project is completed. A survey will also be conducted on teacher perception of student learning while using ball chairs in the classroom.

Chapter IV: Project Methodology

This chapter will outline the implementation of the ball chair project upon receiving the grant. Included will be a timeline of how and when the project will take place. The budget, budget narrative and dissemination plan will be discussed in detail.

Social Economic Status

The Eau Claire Area School District is the eighth largest school district in Wisconsin (*Eau Claire School District 2007 - 2008 Annual Report to the Community*, n. d.). The district covers approximately 200 square miles. Included in the district are the city of Eau Claire and portions of the townships of Brunswick, Clear Creek, Drammen, Hallie, Pleasant Valley, Rock Creek, Seymour, Union, Washington, and Wheaton. The Eau Claire district is made up of 13 elementary schools, 3 middle schools, 2 high schools, and 3 charter schools. According to (*Eau Claire Economic Profile*, n. d.) the city of Eau Claire also has 20 different private schools.

The Eau Claire school district employs 799.53 full time licensed instructors and approximately 10,700 students enrolled (*Eau Claire School District 2007 - 2008 Annual Report to the Community*, n. d.). Licensed instructional staff consists of teachers, subject coordinators, reading specialists, department heads, teachers in charge, school social workers, guidance counselors, school psychologists, physical therapists occupational therapists, program coordinators, media specialists, and speech and language pathologists. The administration staff includes 33 full time employees. District administrators, business managers, directors of instruction, and principals are all included under the heading of administration. The district also has 362.75 full time aides, support staff and other employees. The aides, support and other employees include clerical staff, maintenance personnel, cooks, athletic coaches, hearing

impaired communicators, advisors to clubs, secretaries, and other professional staff in non-educational roles. The Eau Claire school district has a 9.03 ratio of pupils per staff.

There are about 891 certified staff members in the district. Over 59 percent of the certified staff have a masters degree or higher. The average teaching experience in Eau Claire is 11 years. The average teaching salary is approximately \$46,622. It also costs the district \$10,765 a year to educate each child.

The Eau Claire school district has a 99 percent attendance rate. Children in Eau Claire graduate from high school with 22 credits. On the fourth grade Knowledge and Concepts Exams 82 percent of Eau Claire students score within the proficient and advanced levels on the language arts part of the exam. Meadowview has a score of 89 percent of fourth graders scoring proficient and advanced on the language arts part of the Knowledge and Concepts Exam. To be considered proficient in a content area a student has shown competency in that area. Test score shows evidence of skills necessary for progress in the academic content area tested. If a child is advanced in a content area the child has shown academic achievement beyond mastery. The test score provides evidence of in depth understanding in the academic content area tested. ACT tests were taken by 535 students in the Eau Claire school district with a composite score of 22.8.

According to the Eau Claire Economic Profile (n. d.) the city of Eau Claire has an estimated population of 65,360 residents with the Eau Claire county area population at 98,286. The median family household income in the city of Eau Claire is \$41,085. The city of Eau Claire has a 7.4 percent unemployment rate. The average cost of buying a house in Eau Claire is about \$136,500. To rent an apartment, duplex, or home in Eau Claire it will cost you \$350-\$575 for a one bedroom and up to \$1,380 for a four bedroom. Eau Claire's biggest employers are Menard Incorporation and Luther Midelfort-Mayo Health System. They both employ over 3,000 people.

The next largest employers in Eau Claire employ over 1,000 people. These employers include Sacred Heart Hospital, Eau Claire Area School District, and the University of Wisconsin-Eau Claire.

The Eau Claire area has consistently been ranked among the best in the Midwest and in the nation for its quality public education, clean and safe environment, and more. In 2009 Eau Claire was ranked as having the lowest cost of living in Wisconsin. Eau Claire is also advertised as the best place to raise kids. It is also known as one of the top ten affordable places to retire in.

The cities of Altoona and Fall Creek are located in the Eau Claire area. Fall Creek is located 9 miles south east of Eau Claire and Altoona is connected to Eau Claire on Eau Claire's east side. According to the *Altoona Economic Profile* (n. d.) Altoona has experienced continued growth while maintaining a high quality of life and a small town atmosphere. Altoona's proximity to Eau Claire provides its residents the conveniences of a larger community. Altoona has a population of 6,831 residents with an estimated median household income of \$44,684. The average house in Altoona costs about \$127,900. The Altoona School District has 565 elementary students, 475 middle school students, 462 high school students, and 152 students enrolled in private schools.

Fall Creek is only a short distance from Eau Claire's south east side. According to the *Fall Creek Economic Profile* (n. d.) Fall Creek has grown significantly in the past decade. Fall Creek provides a small town atmosphere while supplying the benefits of being in close proximity to a larger city, Eau Claire. Fall Creek has a population of 1,328 residents. There are 361 elementary students, 206 middle school students, and 296 high school students enrolled in the Fall Creek school district.

Action Plan and Timeline

Table 1 outlines a one year timeline for the completion of the project. The project is set up to be completed in an academic school year. Table 1 lays out a month to month plan on the activities it will take to complete the ball chair project. In the fall of the following year information collected from the project will be presented to the teachers and parent teacher organization (PTO) at Meadowview through emails and a presentation. The teachers will be presented the information at an after school staff meeting. The PTO will be presented with the information at their fall PTO meeting held at Meadowview.

Table 1

Timeline

Month	Activity
September 2010	<ul style="list-style-type: none"> ▪ Inform principal of confirmed time line. ▪ Survey teachers on ball chair knowledge ▪ Survey students on ball chair knowledge ▪ Inform parents about ball chairs ▪ Get parent permission for child to participate
October 2010	<ul style="list-style-type: none"> ▪ Set a date for teacher training on the use and care of ball chairs ▪ Materials shipped for teacher training ▪ Training day for teachers
November 2010	<ul style="list-style-type: none"> ▪ Get two samples of student writing ▪ Students educated about earning their ball chair ▪ Teacher sizes the students ▪ Teacher places order for ball chairs ▪ Teacher starts observations and note taking on “time on task” of students during writing
December 2010	<ul style="list-style-type: none"> ▪ Finish student lessons on ball chair use ▪ Balls are shipped to school ▪ Enlist help of custodian to blow up balls ▪ Inform principal of progress ▪ Inform parents of progress through emails
January 2011	<ul style="list-style-type: none"> ▪ Students start sitting on ball chairs ▪ 2-3 weeks before students sit on ball chairs full time ▪ Inform parents of progress through emails
February 2011	<ul style="list-style-type: none"> ▪ Students on ball chairs full time ▪ Review rules and expectations on the use of ball chairs ▪ Inform parents of progress through emails
March 2011	<ul style="list-style-type: none"> ▪ Teacher observations and note taking on “time on task” ▪ Inform parents of progress through emails
April 2011	<ul style="list-style-type: none"> ▪ Get two samples of student writing ▪ Teacher finishes “time on task” observations ▪ Inform parents of progress through emails
May 2011	<ul style="list-style-type: none"> ▪ Post survey of student perception of ball chairs ▪ Post teacher survey on ball chair use in the classroom ▪ Inform parents of progress through emails
June 2011	<ul style="list-style-type: none"> ▪ Review and compare writing data from pre and post ball chair use ▪ Review “time on task” pre and post ball chair use ▪ Inform principal of ball chair outcome ▪ Inform parents of ball chair outcome ▪ Present information to school board at a monthly meeting ▪ Post outcome of ball chair project on district web page ▪ Contact local television stations and news paper ▪ Send final report to grant agency ▪ Inform the Wisconsin Department of Education the outcome of the ball chair project
September 2011	<ul style="list-style-type: none"> ▪ Present to teachers at Meadowview the outcome of ball chair use ▪ Present to PTO at Meadowview the outcome of ball chair use

Evaluation Plan and Tools

Two surveys will be given during the ball chair project. One survey will be given to teachers before the project starts, see appendix B. On this survey teachers will be asked what they know about ball chairs. Teachers will also be asked if they have ever used a ball chair in the classroom. From the pre-ball chair use survey information will be gained on what the teachers' perception is of the positive and negative use of ball chairs in the classroom. Information will also be gained on whether the teachers think academic performance improves with the use of ball chairs. The teachers will also be surveyed after they have been trained on the use of the ball chairs and the project is finished to see if they have gained helpful information on the use of ball chairs in the classroom. A Witt Fitt trainer will come to Meadowview and train any teacher interested in learning about ball chairs and the proper use of them in the classroom.

The first question on the teacher ball chair survey asks what teachers know about ball chairs. At Meadowview the special education teachers are the only teachers that have two or three ball chairs in their classroom and use them on a regular basis. This question will set a base line of teacher knowledge about ball chair use in the general education classroom. The second question asks if the teacher has ever tried a ball chair in his/her classroom. This will help compare the teachers with no experience of ball chairs and the teachers with some experience. By asking teachers about the benefits and negatives of ball chairs in the classroom the pre-survey will lay down the foundation for the Witt Fitt instructor. The instructor will then be able to specifically discuss any misconceptions the staff has. The Witt Fitt instructor will use the results of other studies to show teachers at Meadowview the benefits of ball chairs in the classroom. Witt (2001) stated teachers reported an improvement in students' work. Students also showed improvement in their work habits and social conduct. The ball chairs work your muscles in new

and different ways. It provides the person using the ball chair the feeling of well-being and a readiness for learning.

Students will be surveyed before and after the use of the ball chairs. The questions on the student survey, see appendix C, will show how the students felt about the use of ball chairs in the classroom after they have all had a chance to be trained and use the ball chairs. Witt (2001) stated ball chairs have been shown to be a useful motivational tool that is fun to use in the classroom. With the use of ball chairs students' motor skills and classroom behaviors have improved. Students have many positive comments about the use of ball chairs in the classroom. The survey also hopes to show that students feel the ball chair is not just a toy but has educational benefits.

Student time on task will be kept track of before and during the use of the ball chairs during writers' workshop. Two samples of each students writing will be taken. One sample will be pre-ball chair use and one writing sample will be during ball chair use.

Dissemination Plan

The effectiveness of the ball chair program on academic achievement of first graders will be disseminated to first grade parents through emails. Parents will be updated on the progress of the project from December to May. Classroom parents will also be given information about the ball chair project twice a year during parent teacher conferences. At Meadowview Elementary School I will present results at a staff meeting and a Parent Teacher Organization meeting. In May, I will present the information to the staff at an afterschool staff meeting. In the fall I will present the information to the PTO during their parent meeting. The Eau Claire School district web page will be use to disseminate information to parents and district personal at the end of the project. The information will be posted on the Meadowview page of the Eau Claire School

district web site. In May I will present project results to the school board at a monthly public meeting held at the Eau Claire Board of Education Office. In the Eau Claire area I will disseminate information through the Leader Telegram and the two area TV stations. At the state level information will be disseminated in the summer of 2011 through the Wisconsin Department of Education and through the Wisconsin Education Association. Information will be sent the grant agency at the end of the project.

Budget Narrative

Appendix D outlines the financial resources needed to facilitate the ball chair project. The majority of the budget will be used to purchase the ball chairs for the first grade students.

Personnel Time

Meadowview elementary school will hold a training session for any interested Meadowview teachers on the proper use of ball chairs in the classroom. A 2.5 hour Personalized Webinar training Session will be conducted by a Witt Fitt instructor. Witt Fitt promotes the integration of the stability ball into the classroom and school environment to enhance learning. Teachers will be educated on how to safely and effectively implement the use of stability balls as classroom seating through a customized training designed to fit each unique classroom environment. Instruction will be given on how to meet student needs and link the lessons with district and state standards. Teachers will receive a Witt Fitt manual with lessons to prepare students to sit on the ball as a chair. This session also includes ongoing support throughout the project. Teachers will receive a certification at the end of the training session. This comprehensive program leads schools through the preparatory stages of effective implementation, with lifetime support and consultation.

Direct Costs

The budget for the direct costs includes a teacher's manual to be shared by interested teachers in the building. The teacher's manual includes an online resource link on the Witt Fitt website. The teacher's manual also supplies a primary section for students in preschool through second grade and an elementary section that includes third through fifth grade. The manual leads teachers through student lessons on ball chair use. The lessons include benefits of sitting on ball chairs, the importance of posture and the spine, as well as proper safety, and the use and care of the stability ball. The lessons included in the manual will take from two to four weeks to implement in the first grade classroom. After the lessons the students will have earned the use of a ball chair to use throughout the school day. During the training session and the classroom lessons a teacher ball will be used to show teachers and students the proper use of a ball chair. Each child will receive a ball chair that will be the perfect fit. Students will be measured so the correct size balls will be ordered for maximum benefits and comfort of each child. A double action pump is included in the cost for inflation and deflation of the ball chairs.

Other Expenses

The shipping and handling rate was based upon volume weight of balls and program materials shipped from Witt Fitt to Meadowview School. Paper and printing was estimated on the cost of a package of paper and duplicating costs currently used at Meadowview at this time.

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Appendix A: Cover Letter

April 15, 2010

Dr. Elizabeth Albro
Institute of Education Science
U. S. Department of Education
555 New Jersey Avenue, NW
Room 602B Washington, DC 20208

Dear Elizabeth Abro,

The issue of quality writing produced by kinesthetic learners in education is an important one because every child deserves to succeed in achieving a quality education. As a teacher I have observed that first grade kinesthetic learners learn best when given the opportunity to engage in gross motor activities. There needs to be more data analyses in the area of writing quality and quantity produced by kinesthetic learners. I am a graduate student who is working on my master's degree in education at the university of Wisconsin-Stout and I am interested in exploring this issue.

I have some ideas that may support your agency's mission and goals for funding education projects. Accordingly, I would like to request two items:

1. An application for the Cognition and Student Learning Research Grant Program and guidelines.
2. A list of recent grant winners and project summaries

These items will assist me to better understand your agency's current priorities and to see if there is a match between my interests and funding opportunities.

Sincerely,

Charlotte A. Winkler
First Grade Teacher
1385 Wood Trail
Eau Claire, WI 54703

Appendix B: Teacher Ball Chair Survey

This research has been approved by the UW-Stout IRB as required by the Code of Federal Regulations Title 45 Part 46.

Teacher Ball Chair Survey

Date _____

Grade level _____ Male _____ Female _____

1. What do you know about ball chairs?

2. Have you ever used a ball chair in your room?

3. What are the benefits of using ball chairs in the classroom?

4. What are the negatives of using ball chairs in the classroom?

5. Does academic performance improve while students are sitting on ball chairs?

6. Would you ever use ball chairs in your classroom?

Appendix C: First Grade Ball Chair Survey

This research has been approved by the UW-Stout IRB as required by the Code of Federal Regulations Title 45 Part 46.

First Grade Ball Chair Survey

Date _____ Age _____ Boy _____ Girl _____

1. Did you like sitting on the ball chair?

Yes No

2. What was good about sitting on a ball chair?

3. What didn't you like about sitting on a ball chair?

4. Did sitting on the ball chair distract you from learning in school?

Yes No

5. Did sitting on the ball chair help you to learn in school?

Yes No

6. Should first graders have the choice of what they want to sit on in the classroom?

Yes No

Appendix D: Budget

Budget

I. Personnel

Description	Quantity & Cost	Budget Request
Personalized Training Session	1 @ \$275.00	\$275.00
Subtotal Personnel		\$275.00

II. Direct Costs

Description	Quantity & Cost	Budget Request
PreK-2 nd Teachers Guide	1 @ \$50.00	\$50.00
Burst-resistant, latex free Stability ball w/legs (teacher)	1 @ \$32.00	\$32.00
Burst-resistant, latex free Stability ball w/legs (student)	25 @ \$28.00	\$700.00
Double action pump	1 @ \$20.00	\$20.00
Subtotal Direct Costs		\$802.00

III. Other Expenses

Description	Quantity & Cost	Budget Request
Shipping & handling	Rate based upon volume Weight of balls	\$140.00
Duplication	Paper and printing	\$25.00
Subtotal Other expenses		\$165.00
Total requested Budget		\$1,242.00