STUDENT AND TEACHER PERCEPTIONS OF STABILITY BALLS AS ALTERNATIVE SEATING IN A FIRST GRADE CLASSROOM

Nicole Schoolcraft

Abilene Christian University

Abstract In recent years, many teachers have chosen to replace desk chairs with stability balls in their classrooms in order to improve student attentiveness. The purpose of this study was to gain a deeper understanding of what first grade students and their classroom teacher thought about using stability balls instead of desk chairs. The author collected data through student and teacher interviews, observations, and a student survey. After analyzing the data by using the constant comparative method, the author found three major themes. The first was that some students believed moving while being seated was helpful, while others found movement distracting. Second, the author found that student attentiveness was related to movement and productivity. Third, students valued their ability to choose their seating. This study may provide useful information to other educators who are deciding if they would like to try alternative or flexible seating in their classroom.

Keywords: teacher action research, alternative seating, flexible seating, movement, student choice

Introduction

"Sit still. Why are you getting up? Stop bouncing your leg. Don't lean back in your chair. Sit up straight. Quit kicking the desk. Put both feet on the floor." I imagine that most educators are familiar with these phrases. Some would probably admit to using one or more of these phrases daily. Teachers have diligently searched for ways to increase student engagement and decrease discipline problems in the classroom in order to maximize learning. While teaching styles, lessons, and activities impact student attentiveness, so does classroom environment. The students' interaction with the classroom environment can either promote or prohibit on-task behavior (Bronfenbrenner, 1979). Part of the classroom environment includes student seating. In the past, seating has typically included plastic or wooden desk chairs. However in recent years, teachers have begun using stability balls instead of desk chairs with hopes that they will increase student attentiveness while students work at their desks.

The purpose of this study was to gain a better understanding of student and teacher perceptions of stability balls as alternative seating. I also wanted to understand the students' and classroom teacher's perceptions of student attentiveness when students had the option to sit on stability ball rather than a desk chair. My research questions included the following:

- What are the students' and the teachers' perceptions of the use of stability balls as alternative seating in a first grade classroom?
 - Sub question: What are the students' and the teacher's perceptions of their/student attentiveness regarding the use of stability balls?

During this study, I was a graduate student completing a yearlong clinical teaching placement in a first grade classroom at Riverside Elementary (all names have been replaced with pseudonyms). Riverside was a Title I school that served approximately 500 students in grades K-5.

My cooperating teacher applied for and received a grant to replace the desk chairs in her classroom with stability balls in September. We introduced and began using the stability balls in November—about two months prior to the start of my research. Every student had the option to choose between using a regular desk chair and sitting on a stability ball when they worked at their desks each day. We established clear expectations for the use of the stability balls through minilessons and explicit modeling. Some of these expectations included the following: not bouncing too high, sitting with both feet on the floor, not drawing or marking on the ball. We did not start using all 21 stability balls at the same time. We started by passing a few stability balls from student to student during the day, and slowly added more after all students had about two weeks to practice using them. If a student did not follow these expectations, he or she would lose the privilege of sitting on the stability ball for the remainder of the day, but would be allowed to use the ball the next day.

Literature Review

One reason teachers use stability balls in the classroom is because they allow students to move while seated at their desks (Wyatt, 2009). The increased movement is thought to increase student alertness, which may facilitate increased student learning (Mead, Scibora, Gardner, & Dunn, 2016). Burgoyne and Ketcham (2015) stated the following:

Researchers hypothesize that by bombarding the vestibular and proprioceptive systems with increased input, sensory processing can be improved to help students achieve an appropriate response to classroom demands by focusing on relevant stimuli. When the sensory system has an overload of information, it is better able to select relevant input out of the extraneous information in order to produce appropriate responses to a given situation. (p. 47)

The vestibular system is located in the inner ear and controls balance and movement (Jensen, 2005), while the proprioceptive system is responsible for a person's awareness of their body and coordination of limbs (Burgoyne & Ketchum, 2015). These systems work closely together to provide sensory information to the brain about balance, movement and body position (Burgoyne & Ketchum, 2015). Children begin to fidget because their bodies are seeking sensory input and movement (Hanscom, 2014). Similarly Jenson (2005) stated, "Physical movement such as standing, stretching, walking, or marching can increase brain amine levels, which can help improve attentional focus" (p. 51).

Fedewa & Erwin (2011) found that the stability balls were effective in increasing on-task behavior and decreasing levels of hyperactivity because students were able to bounce while working. Both educational research and brain research affirms that movement is linked to learning and attentiveness. This is because the cerebellum processes both learning and movement (Jenson, 2005). There are many ways to get students moving during the day, but sometimes seatwork is necessary. Having stability balls as alternative seating allows for more movement even when students are working at their desks (Burgoyne & Ketchum, 2015).

Many researchers have investigated the effects of stability balls on behavior for students with special needs and students with behavioral concerns. Studies have focused on students with Attention Deficit Hyperactivity Disorder (ADHD) concerns (Fedewa and Erwin, 2011), Autism Spectrum Disorder (Schilling & Schwartz, 2004), inattention, hyperactivity, oppositional defiant behaviors, anxious/depressive symptomatology (Gaston, Moore, & Butler, 2016), and dyslexia (Goodmon et al., 2014). These researchers concluded that the use of stability balls decreased levels of hyperactivity and discipline referrals and increased attention and engagement. While these studies are useful and informative for teachers who teach exceptional students, they lack information about the impact of stability balls as seating for general education students.

A main focus of current research articles about stability balls as classroom seating is their impact on student engagement and on-task behaviors. According to Fedewa, Davis, and Ahn (2015), the use of stability balls was related to a decrease in disruptive behaviors in treatment classrooms, and similar levels of on-task behavior and achievement in control and treatment classrooms. Schilling and Schwartz, (2004) found that the use of stability balls increased engagement and in-seat behavior for students with Autism Spectrum Disorder. According to Fedewa and Erwin (2011), all of their 76 fourth- and fifth-grade participants showed signs of increased attention and improved hyperactivity when seated on a stability ball. Burgoyne and Ketchum (2015) also found that when students were seated on stability

balls 85% of observations indicated on task behavior, as opposed to 50% of observations when students were seated on a desk chair.

When studying the use of stability balls in the classroom, some researchers have investigated possible academic benefits associated with this type of alternative seating. Fedewa et al. (2015) found that stability ball use did not significantly impact student achievement levels on standardized math and literacy tests. Mead et al. (2016) studied how the use of stability balls as seating, compared to other forms of exercise, impacted student achievement on a standardized math test. They found that there was a positive impact on student math scores when they were seated on the stability balls (Mead et al., 2016). Goodmon et al. (2014) noted that stability balls did not have an impact on the reading comprehension of students with dyslexia. These mixed results indicate a need for further research on the academic impacts of stability balls used in place of desk chairs.

Another important factor to consider when looking at stability balls as alternative seating is student and teacher preference. Studies have shown the positive impact of using stability balls instead of desk chairs, but what do students and teachers really think about this form of alternative seating? According to Fedewa and Erwin (2011), Schilling and Schwartz (2004), and Gaston et al. (2016) social validity surveys completed by teachers indicated that they preferred to use the stability balls in their classrooms. Goodmon, Leverett, Royer, Hillard, Tedder, and Rakes (2014) and Gaston et al. (2016) mentioned that the students in their studies preferred to sit on a stability ball. These studies provide a small indication that students and teachers may prefer to use stability balls rather than traditional chairs. There is a lack of research; however, dealing specifically with student and teacher perceptions of stability balls as alternative seating.

Not only are there studies that focus on academic achievement and student behavior, but some of these studies also include discussions of student health. Childhood obesity and the impact of a sedentary lifestyle have become major concerns in the United States. According to Aminian, Hinckson, and Stewart (2015) and Wendel, Benden, Hongwei, and Jeffrey (2016) decreasing the amount of time a student sits still can positively impact their health. Wendel et al. (2016) found that by trading traditional desks for standing desks had a significant impact on student's Body Mass Index. Aminian et al. (2015) studied a classroom that used standing desks as well as stability balls and found that teachers believed the environment resulted in, "increased space, social interactions, happier children, and better, quicker and easier supervision" (p. 643). One study on the physical impact of the use of stability balls as seating yielded neutral results. According to Erwin, Fedewa, Soyeon, and Thornton (2016), stability balls do not necessarily increase physical activity levels, but they do not have a negative impact on classroom learning and environment. These results indicate a need for further research on the relationship between classroom environments and student health.

The results of previous studies indicated that stability balls may be helpful tools to keep student in their seats and focused. My study is important because much of the research that has been done on this topic has focused on the benefits for students with special needs or with hyperactivity concerns. My study provides insight into how the use of stability balls, as alternative seating, could be beneficial in a general education classroom. It is difficult for young students to remain still while at their desks, which can create distractions or behavior problems. When students are given the option to sit on stability balls they may be more engaged and more likely to remain on-task. Other students may prefer to sit in a chair, but giving them the option to choose between a chair and a stability ball may increase attentiveness. According to Wyatt, (2009), the use of stability balls is becoming a trend in elementary classrooms because teachers are seeing increased engagement and on task behaviors. My study contributes to knowledge in the educational community because it focused on the responses and observed behaviors of an entire first grade general education class. This study provides better understanding of student and teacher opinions toward the use of stability balls as alternative seating.

Methodology

The following describes an action research study conducted in the context of a first grade classroom. I studied the perceptions of students and the classroom teacher in relation to general thoughts about the stability balls as well as their thoughts regarding student attentiveness when using the stability balls. Students were comfortable with my role as a teacher and researcher in the classroom because this study was conducted during a portion of my yearlong clinical teaching placement.

Participant Selection. The participants of this study included a single class of first grade students. There were twenty-one possible participants. There were eight girls and 13 boys. The class demographics included the following: 14 white students, five students of mixed race, one African American student, and one Hispanic student. There were three boys and three girls identified as gifted and talented students. When the study began, my cooperating teacher had just completed her Master's in Gifted Education.

Every student who received consent and assented to the study participated in the survey and observations. I used purposive sampling (Patton, 1990) to select students from the class to participate in a short interview. Nine male and female students were chosen for an interview based on my observations of their on-task behaviors at their desks. I interviewed three students who were always on task, three students who were on task most of the time, and three students who were rarely on task. The classroom teacher was also a participant in this study. I conducted an interview with my cooperating teacher to learn more about her perceptions of the stability balls. I sent home an informational letter and a consent form to the parent or guardian of every student in the class. The students who received parental permission to participate in the study completed an assent form while at school. The cooperating teacher also received an informational letter and consent form. I provided a copy of consent letters for participants to keep.

Data Collection. For this study I collected three types of data: observations, interviews, and a class survey. I observed student behavior when they were working at their desks. I wrote field notes three times a week for two weeks about student behaviors I observed. I recorded observations about the on-task and off-task behaviors I observed while students were working at their desks.

I conducted nine individual semi-structured student interviews that lasted approximately 5-10 minutes each. In these interviews, I asked questions regarding student opinions about using stability balls instead of desk chairs. I wanted to know if they thought the stability balls were helpful tools that helped them stay focused. I also conducted an interview with my cooperating teacher that lasted approximately 25 minutes. During this interview, I asked about why she began using the stability balls and what perceived benefits or drawbacks she had observed since introducing this form of alternative seating. I also wanted to know more about her thoughts regarding the effectiveness of the stability balls in relation to student behavior and attentiveness.

The entire class took a survey about their perceptions of the stability balls; however, I only used data from students' surveys, which assented and received consent to participate in the study. Did they like using the stability balls? Did being able to move help the students feel more focused? All students completed this survey during class. I used survey data in addition to the interview data to gain a more complete picture of how the class felt about the stability balls.

Data Analysis. I analyzed data through the use of the constant comparative method with initial coding followed by the identification of major categories with supporting codes (Hubbard & Power, 2003). First, I manually analyzed about twenty percent of the collected data and created approximately 20 codes. From these level I codes, I then organized my data by creating level II codes based on major themes (Tracy, 2013). I also created a codebook (Found in Appendix B) that listed level I and level II codes, definitions, and examples. I wrote memos based on the level II codes, which allowed me to gain a better understanding of their meanings and connections to the other codes (Tracy, 2013).

Results and Discussion

Based on my data analysis, the major themes I will describe are movement, student attentiveness, and the importance of choice. In the descriptions of my findings I will also

include examples of themes from interviews, observations, and surveys. (A complete list of student responses to the survey questions can be found in Appendix B). I included a photograph in of one of the stability balls we used in our classroom in Figure 1.



Figure 1. Photograph of a student's stability ball.

Movement. As I recorded and reflected on my observations, I knew that bouncing, rolling, sitting, and standing would be recurring descriptions of the movement theme in my study. I took notes on the different movements students made while sitting on the balls during my observations. Some students using the stability ball bounced quickly, some bounced occasionally, some rolled back and forth, and others sat still on the ball. During all of my observations, there were clear signs of movement from the majority of students.

When asked if moving while at their desks helps them learn on the class survey, 7 students answered yes, 8 students answered sometimes, and 4 students answered no. On the survey free response question about what students like about the stability balls, eight students mentioned moving on the ball or bouncing. Some of the responses included the following: "They're bouncy. That you can move. That you can bounce". As shown in Figure 2, Joey wrote that he likes "how they bounce". Seven of the students' surveys were similar to Joey's because they liked how the balls allowed them to bounce, and there was nothing they disliked about the stability balls.





However, I also found that not every student thinks that movement is helpful. One student I interviewed thought that the balls were good for exercise, but not classroom seating. Aaron said, "They kind of give you a distraction cause you can accidentally bump into stuff." He then talked about how he felt like the stability balls were helpful for exercise, but not really helpful for staying focused. When I asked Aaron if he thought the stability balls helped him do his work in school he said, "Well it's a good form of exercise, but no. I think they help me a little bit...because it's good exercise." In my observations Aaron was often looking around the room or playing with items in his desk instead of working. It is interesting to note that while Aaron finds the stability balls to be distracting, he seldom chooses to sit in his chair. Out of my six observations, Aaron only chose to use his chair on two of the days.

On the student surveys there were three students who wrote that they did not like the stability balls because they are bouncy. Aaron, Jacob, and Harrison all indicated on their surveys, as seen in Figures 3, 4, and 5, that they did not like bouncing or moving on the stability balls. During my observations, these students chose to sit on a chair more often than they had prior to the beginning of my study. Harrison is the only student in the class who consistently chose to sit on his chair more than once per week. While all the students did not seem to agree on whether or not the balls helped them, they agreed that the stability balls were fun. When asked about what he liked about the stability balls Aaron said, "Well they're fun to sit on...cause you can bounce on them."





Figure 4. Portion of student survey. "I do not like bouncing."



Figure 5. Portion of student survey. "I don't like when the stability ball moves."



During a few of the student interviews, students mentioned that the stability ball helps their posture. After asking how the ball helps her stay focused when she's bouncing, Brielle said, "It makes my back like straight, and I can work with fresh air." Some students still slouch or lean over on their desks, but the stability balls do help some students have better posture because the balls do not have backs. This was another reason that Aaron did not like using the stability ball. He said, "I honestly don't like them very much cause if you lean back you fall right over and in a chain you can just lean back and you don't fall over." Not having a back on the stability ball forces most students to sit up straight, which may keep them more alert. Peter said, "Well, you can bounce a little bit on them, and they help you stay focused, and you sit up straight, and that makes you focus more than sitting crouched." For Brielle and Peter, posture was related to attentiveness. When they're sitting up straight they are focused and alert, but if they are slouched over, they may not be paying attention.

Movement is something most students and the teacher like about the stability balls. Movement is also seen as something that can impact student attentiveness. According to Madison, "...sometimes they help me concentrate...when my mind gets all confused, sometimes I need to...like sometimes I do verb." While it may be distracting to some students, the movement is very beneficial to other students. Sadie stated, "They (stability balls) help you learn. And this is how I think they help you learn, because you get to bounce and that kinda helps your brain keep thinking..." Movement has been shown in previous research to be helpful when learning (Mead et al., 2016) and in facilitating on task behavior (Burgoyne & Ketchum, 2015), and this data about movement further emphasizes why most students like using the stability balls instead of desk chairs. Student Attentiveness. One of my research questions was the following: What are the students' and the teacher's perceptions of their/student attentiveness regarding the use of stability balls? I found that my cooperating teacher believes the stability balls do help with student attentiveness. I also found that most students think using the stability balls as seating helps them pay attention in class. According to the class survey, 84% of the class thought that the stability balls helped them focus at least some of the time. As shown in Figure 6, Travis wrote on his survey that he likes the stability balls because, "they help me be focused." According to his survey, he believed that moving at his desk sometimes helps him learn, and he liked that the stability ball helps him stay focused.



2. Is there anything about using stability balls that you don't like?

Figure 6. A portion of a student survey.

1. What do you like about using the stability balls?

In the student interviews, we discussed whether or not they felt that the stability balls helped them pay attention. Eight out of the 9 students felt that the ball at least sometimes helped them focus. Daniel said, "It just helps me concentrate more cause when I lean up against my desk, it helps me concentrate more." When discussing how the ball helped students pay attention, the students always attributed it to their posture or ability to move. Brielle said, "They help me stay focused when I'm really anxious cause I want to get done really fast, and I like how it keeps me focused". When I asked her how this would be different if she just had a chair she said, "Cause it's (the chair) is hard and you can't like move and it's like stiff."

In her interview, my cooperating teacher reflected on her initial goal to increase student engagement and productivity. She said she was surprised when the balls did not have much of an impact on student engagement. She said, "So I'd say they're [stability balls] more beneficial for productivity than they were engagement even though I would have originally thought it would've been both." She anticipated that when students were seated on the ball, they would be more engaged in whatever they were working on, but realized that engagement relates more to the subject and activity. Students will not automatically be engaged in the paper or activity just because they are seated on the stability ball. While the stability balls seemed to help some students focus on the task at hand, there was no guarantee that all students would be attentive if they were also using the stability ball. If a student is not interested and invested in his or her work or activity, there is no seating that could compel him or her to stay focused.

My cooperating teacher and I then discussed how there was a notable increase in productivity of students in writer's workshop. Because of how we structured our schedule and lessons, students did not typically spend very long working at their desks other than during writer's workshop. We tried to give them anywhere from 15-30 minutes of uninterrupted writing time every day. Because of this structure, students spent the most time on their stability ball during writer's workshop. According to my cooperating teacher, "...things like publishing, not everybody would've published and been on time, this time we only had two who weren't done on time. That showed me that our productivity has increased". Whether this increased productivity was related to the stability balls, or natural student growth is not distinguishable, but my cooperating teacher believes that it was both. In order to be productive, students must be attending to their work. Therefore, because more students published their writing on time, student attentiveness has increased.

The Importance of Choice. This was an unexpected code, but I believe it is the most important to my study. I found that above all other things; this was why the stability balls are important. My cooperating teacher said, "I like that they (students) get a choice every morning if they want to sit on the chair or on the ball just adding one more thing that gives them ownership over their own learning throughout the day. I think it's beneficial." This major theme was connected through all aspects of my research. Students *chose* a ball or a chair. Students *chose* how to move on the ball or if they wanted to sit still on the ball. Students *chose* how hard they would work while being seated on the ball.

Every student I interviewed, and I would imagine all of the other students in the class, would agree that choice is very important in the classroom. According to Kimberly, "...sometimes people don't really want to sit on the balls and if they don't have a choice, they have to sit on it. If people want to sit on the ball, but they have a chair they may want to have a choice to switch it". When I asked Brielle what she liked about the stability balls she said, "That sometimes you can switch out your ball for a chair and you can just...I like where you can use a chair and you can have to switch for a chair. I asked her why she liked that they could switch a ball for a chair and she said, "Because if you start feeling like I don't want the ball

today, I can switch it out for a chair. I like that my cooperating teacher didn't get rid of them (the chairs). Even though I don't switch it (the ball) out, it's still a good idea."



Figure 7. A portion of a student's survey.

The survey in Figure 7 shows that Sadie wanted a choice. She wanted to be able to choose between a ball or a chair. I did not think to include a both option on this survey, but I wonder how it would have impacted the data in my study. Four students who took the survey would prefer a chair, one student would prefer both, and 14 students would prefer to use the stability ball. In Sadie's interview I asked if she had to use a stability ball or a chair for the rest of the year, she responded, "If it was the first day of school, I would use both. But if you could only use one, I would rather do the ball because I've only done the chair in the beginning of school..." When I asked Kimberly the same question she said, "Mmm both at a different time...like maybe I would choose a ball for a few days and then the chair for a few days."

These responses about the stability balls and choices are important because they imply that students may need even more choices. During a few of the interviews I asked students about some additional options they might like in the classroom. Some of their responses included the following: cloth seats, cushions, rolling desk chairs, stability balls with printed patterns or different colors, stability balls that have backs, and stability balls that will not roll away. Jenny said, "I like you have the choices of sitting on stability balls or chairs." Students did not seem to really be concerned with what type of seating was offered, as long as there was more than one option.

Implications

Teachers and the education community often discuss the importance of choice in student learning, but the conversation is now beginning to shift also toward student choice in classroom seating. This is opening up a whole new realm of student ownership and meeting the needs of all students in the classroom. I know that all students need different things when it comes to instruction, and I would also argue that this also applies to seating in the classroom.

In order to learn, students need to be comfortable, focused, and willing to work. When teachers give students the option to choose where they will learn and work best, we empower them and teach them how to make decisions that will meet their own needs. The option of sitting on a stability ball impacted student learning by making the classroom more student-centered. While student engagement seems to depend on subject matter and student interest in individual activities, attentiveness and productivity may be impacted by the use of stability balls in the classroom.

Movement and student attentiveness were very closely related in my study. According to the students, most of them felt that the ball helped them focus because it allowed for movement. Students recognized that having to sit still in a chair sometimes negatively impacted their posture and constricted possible movement. Students like that the stability balls allow them to bounce while they work. While they may not have realized the neurological implications of this movement, they did understand that movement could positively impact their focus and their learning.

My most significant finding was the importance of choice when it comes to classroom seating. Whether or not the students liked the stability ball or the chair better wasn't as significant as how much students and the teacher valued having a choice. Teachers want to empower students, give them what they need, and help them learn. One way we can do this is by considering the use of seating other than the standard desk chair.

My cooperating teacher suggested in her interview that teachers try alternative seating. This doesn't have to be a major change or even something that happens all in one day. Teachers can start by introducing one stability ball or another form of seating at a time to their classroom. Once a teacher feels more comfortable, he or she can introduce more options for seating. Other teachers may want to implement flexible seating, which is when there are several seating options and students may choose daily where they would like to be. There are no hard and fast rules to alternative and flexible seating, rather the teacher gets to try different things that might work for his or her students.

When considering alternative or flexible seating options, teachers should consider searching for grant money through various websites or through school districts. There are also websites teachers can use to get donations from the public. Teachers can submit a story about what they would like to buy why they need money. These websites will then allow people to make donations toward your specified need, and when your project is fully funded, they will ship the requested supplies to your school. Do not let the thought of expenses shy you away from considering alternative seating.

While this study on alternative seating was important and very informative, I am left with questions about how students would respond to alternative and flexible seating arrangements. I love that the students had choice between a chair and a stability ball, but what would happen if even more seating options were introduced? Is there a correlation between flexible seating or alternative seating and academic performance? How do multiple seating options impact student attentiveness and productivity?

This research will impact my future practices because I know how important it is for students to have different seating options. I know that some students need seating that will allow movement while they are seated. Other students need to be still, and may prefer cushions, couches, or sitting on the floor. Knowing that students need choices, I will be able to begin searching for different seating options for my classroom.

Conclusion

Using stability balls as alternative seating was a great way to introduce more student choice in the classroom. While most students thought it was fun to bounce while they worked or felt like it helped them focus, this was not the case with all students. Above all, choice was shown to be very important to both students and the classroom teacher. I am excited to see how new trends in classroom seating impact classroom environments and student workspaces.

I realize that flexible seating may not be realistic for every teacher, but I think it should at least be considered. When students can pick if they're standing, or sitting in a chair, on a ball, on the floor, they are more likely to get what they need. If implemented well, I think flexible seating or having many different seating options could improve behavior management and help students stay focused for longer periods of time.

About the Author

Nicole Schoolcraft is a first grade teacher in Fort Worth, Texas. She graduated with her bachelor's and master's degrees from Abilene Christian University. Email: nrs11b@acu.edu

References

- Aminian, S., Hinckson, E. A., & Stewart, T. (2015). Modifying the classroom environment to increase standing and reduce sitting. *Building Research & Information*, *43*(5), 631.
- Bronfenbrenner, U. (1979). The ecology of human development. Cambridge, MA: Harvard University Press.
- Burgoyne, M. E., & Ketcham, C. J. (2015). Observation of classroom performance using therapy balls as a substitute for chairs in elementary school children. *Journal of Education and Training Studies*, *3*, 42–48.
- Erwin, H. E., Fedewa, A., Soyeon, A., & Thornton, M. (2016). Elementary students' physical activity levels and behavior when using stability balls. *American Journal of Occupational Therapy*, 70(2), 1-7.
- Fedewa, A., Davis, M. A. C., & Ahn, S. (2015). Effects of stability balls on children's on-task behavior, academic achievement, and discipline deferrals: A randomized controlled trial. *American Journal of Occupational Therapy*, 69(2), 1–9.
- Fedewa, A. L., & Erwin, H. E. (2011). Stability balls and students with attention and hyperactivity concerns: Implications for on-task and in-seat behavior. *American Journal of Occupational Therapy*, 65, 393–399.
- Gaston, A., Moore, S., & Butler, L. (2016). Sitting on a stability ball improves attention span and reduces anxious/depressive symptomatology among grade 2 students: A prospective case-control field experiment. *International Journal of Educational Research*, 77, 136–142.
- Goodmon, L. B., Leverett, R., Royer, A., Hillard, G., Tedder, T., & Rakes, L. (2014). The effect of therapy balls on the classroom behavior and learning of children with dyslexia. Journal of Research in Education, 24, 124–145.
- Hanscom, A. (2014, July 8). Why so many kids can't sit still in school today. *Washington Post*. Retrieved from https://www.washingtonpost.com/news/answer-sheet/wp/2014/07/08/why-so-many-kids-cant-sit-still-in-school-today/
- Hubbard, R. S., & Power, B. M. (2003). *The art of classroom inquiry: A handbook for teacher-researchers* (Rev. ed.). Portsmouth, NH: Heinemann.
- Jensen, E. (2005). Teaching with the brain in mind (2nd ed.). Alexandria, VA: ASCD.
- Mead, T., Scibora, L., Gardner, J., & Dunn, S. (2016). The impact of stability balls, activity breaks, and a sedentary classroom on standardized math scores. *Physical Educator*, *73*, 433–449.
- Patton, M. (1990). Qualitative evaluation and research methods (2nd ed.). Newbury Park, CA: Sage.
- Schilling, D. L., & Schwartz, I. S. (2004). Alternative seating for young children with autism spectrum disorder: Effects on classroom behavior. *Journal of Autism & Developmental Disorders*, *34*, 423–432.
- Tracy, S. J. (2013). *Qualitative research methods: Collecting evidence, crafting analysis, communicating impact.* Chichester, West Sussex, UK: Wiley-Blackwell.
- Wendel, M. L., Benden, M. E., Hongwei, Z., & Jeffrey, C. (2016). Stand-biased versus seated classrooms and childhood obesity: A randomized experiment in Texas. *American Journal Of Public Health*, 106, 1849-1854.

Journal of Teacher Action Research - Volume 4, Issue 3, 2018, <practicalteacherresearch.com>, ISSN # 2332-2233 © JTAR. All Rights

Wyatt, K. (2009). Stability balls let kids get rid of the wiggles. Retrieved from http://www.sfgate.com/education/article/Stability-balls-let-kids-get-rid-of-the-wiggles-3168996.php

Appendix A: Student Survey

Student Survey

1. Do you like to use the stability balls?





yes





3. How often do you choose to sit on the stability ball?



always





4. Would you rather sit in a chair or on a stability ball?



chair

Stability ball

Journal of Teacher Action Research - Volume 4, Issue 3, 2018, cpracticalteacherresearch.com>, ISSN # 2332-2233 © JTAR. All Rights

5. Do you think moving while you are at your desk helps you learn?



yes





- 1. What do you like about using the stability balls?
- 2. Is there anything about using stability balls that you don't like?

Journal of Teacher Action Research - Volume 4, Issue 3, 2018, cpracticalteacherresearch.com>, ISSN # 2332-2233 © JTAR. All Rights



Appendix B: Survey Data and Codebook

Question	Yes	Sometimes	No/Never
1. Do you like to use the stability balls?	10	8	1
2. Do the stability balls help you stay focused?	11	5	3
3. How often do you choose to sit on the stability ball?	11	8	0
4. Would you rather sit in a chair or on a stability ball?	Ball: 15	Chair: 4	
5. Do you think moving while you are at your desk helps you learn?	7	8	4

1. What do you like about using the stability balls? (Each sentence is a different student's response.)

I can move. It helps me learn reading. They're teal and teal is my favorite color and they bounce. Help me be focused. They're comfortable. Bounce. They're bouncy. Helps my tailbone. The balls you can bounce on them. I like how they bounce up. You can bounce. That you can bounce. That you can move. They're fun to bounce on, but some of the balls are not bouncy.

2. Is there anything about using stability balls that you don't like? (Each sentence is a different student's response.)

They're bouncy. Nothing. No. I lose them. Falling down. I don't like when the stability ball moves. I do not like bouncing.

Codebook							
Code Name	Level	Definition	Example				
AT-always on task	1	Behaviors that show a	"Writing the whole time,				
		student is always on task	worked quietly, worked				
			the whole time"				
MT-on task most of the	1	Behaviors that indicate a	"talking to neighbor,				
time		student is on task most of	looking around the room,				
		the time	wrote most of the time"				
RT-rarely on task	1	Behaviors that indicate a	"getting up often, talking				
		student is rarely on task	to neighbor, playing with				
			supplies on desk"				
Sitting still		Any mention of sitting still	a get tired of bouncing				
			around and I would just				
Monoy and grants	1	Montion of monoy or	like to sit still.				
Money and grants	1	grapts	through a grand thon I				
		grants	could've done things like				
			dopors choose "				
Order delay	1	Mention of the delayed	"I purchased it and I				
order delay	1	delivery of the stability	waited and waited and it				
		halls	said it was going to take				
		50115	like two months to get				
			here."				
Ball design	1	Mention of the stability	"I like that they have feet				
		ball design or how the	on the bottom."				
		design could be improved					
Research	1	Mention of my mentor	"There wasn't a lot of				
		teacher's research	research about the use of				
			it with gifted students, but				
			there is a lot of research				
			with students with				
			Attention Deficit				
			Disorder"				
Donors choose	1	Discussion of the donors	"it's attached to your				
		choose website	school it's a legitimate				
			thing, but basically you get				
			on there and you say what				
			you're wantingand then				
			people can get on there				
			and they can donate				
Correct ball use	1	Discussion of how to	"				
Correct ball use		Discussion of now to	It's not a toy it is our				
		the stability ball	condition unat it s flot d				
			ball or any kind of ball like				
			that "				
Meeting student needs	1	Mention of how teachers	"I think that students and				
meeting student needs	-	can meet students' needs	how students learn are				
			changing and I think that				
			this is one way that				
			teachers are trying to				

			figure out a way to keep
			up with what students
Distraction	1	Discussion of how the	"Sometimes they can
Distruction	-	stability ball can be a	actually distract you from
		distraction	working "
Exercise	1	Mentions of the stability	"I think they help me a
		ball being used for	little bitbecause it's a
		exercise	good form of exercise."
Safety	1	Mention of safety or	"Because if you lean back
		something not safe in	your stability ball you can
		relation to sitting on the	fall over and get very
		ball	injured."
Posture	1	Mention of sitting posture	"And also for good
			posture, it's helpful for
			your back."
Fun	1	Mention of the stability	"Cause chairs, they're
		ball being fun	kinda boring, and balls are
			fun."
On the rug	1	Mentions of wanting to	"What I want to change
		use the ball on the rug	about the stability balls is
			that we can sit on them on
			the rug."
Behavior management	1	Discussion of behavior	"So they kind of get a
		management in relation to	warning and so if they're
		the stability balls,	still not sitting on it
		including the mention of	correctly they need to
		rules, or consequences	switch back for their
			chair."
Movement	2	Anything that mentions	"And this is how I think
		movement while seated	they help you learn
		on the ball	because you get to ounce
			and that kinda helps your
			brain keep thinking"
Choice	2	Anything that indicates	"I like how you have
		student choice related to	choices of sitting on
		classroom seating	stability balls or chairs."
Attentiveness	2	Any mention of student	"They help me stay
		attentiveness, focus,	focused when I'm really
		paying attention, or on	anxious cause I want to
		task behaviors	get done really fast and l
			like how it keeps me
			tocused."