Exploring the Impact of Classroom Chairs on Urban Elementary Teacher and Student Behavior

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Abstract

This mixed methods study explores one urban elementary classroom's use of stability ball chairs. Through surveys, interviews, and video observation, we investigated the teacher and her students' experiences in changing from traditional chairs to more active furniture. Results indicate that students' preferences for using the stability ball chairs was complemented by the teacher's belief that they were more productive. Additionally, the teacher's use of various classroom management strategies shifted towards more behavioral corrections after the implementation of the stability ball chairs. Findings have implications for the impact of innovative furniture on teacher and student experiences.

Keywords: Classroom chairs, elementary school, English Language Learners

Introduction

Urban teachers have a greater tendency of being in schools that have higher rates of students with behavioral issues (Bowers, 2010; Obidah & Howard, 2005; Pianta, La Paro, Payne, Cox, & Bradley, 2002), which can cause major distractions and limit teachers' opportunities to effectively carry out their lesson plan (Carlson, Tiret, Bender, & Benson, 2011; Jacob, 2007; Weiner, 2000). However, teachers can be the source of student success and promote learning in spite of difficult surroundings, particularly when they effectively incorporate classroom management strategies. These strategies

have been shown to have positive effects on various student outcomes including achievement, motivation, and positive self-esteem (Evertson & Weinstein, 2006; Solomon, Watson, Battistich, Schaps, & Delucchi, 1996; Stronge, Ward, & Grant, 2010). For elementary teachers in particular, they have to deal with age and context-specific issues that tend to put a larger focus on classroom management strategies to prevent student misbehavior compared to teachers of higher grade levels. Using indirect classroom management strategies such as changing out classroom chairs for stability ball chairs may help prevent student misbehavior and support a more positive classroom environment.

This mixed methods study investigates whether a change in classroom chairs could have positive outcomes on teacher and student behavior, and whether they could serve as a practical strategy to manage an urban elementary classroom. For the teacher, we explore her use of behavior management strategies and whether or not they may have changed before and after the students' use of stability ball chairs. Relatedly, we investigate students' belief on their classroom experiences as a result of using these chairs, which has shown some promise regarding evaluation of classroom management (Montuoro & Lewis, 2015). Therefore, the research questions that guide this study are as follows:

1. What are students' beliefs about how classroom chairs impact their learning and behavior?
2. How do students' beliefs about classroom chairs change over time?
3. What are the teacher's beliefs about how classroom chairs impact student learning and behavior?
4. What behavior management actions does an elementary urban teacher integrate throughout the year?
5. How do behavior management actions change when students use stability ball chairs in the classroom?

Literature Review

Elementary teachers' strategies for student misbehavior. While classroom management refers to managing multiple aspects within the classroom, this study primarily focuses on classroom management actions that impact student behavior. This is because early childhood problem behaviors in the classroom can lead to negative and persistent outcomes for those students moving forward in school (Gettinger & Fischer, 2014) and younger children have been identified as more difficult to manage than older children because of less maturity levels (Lane, Pierson, Stang & Carter, 2010). Three strategies were consistently emphasized throughout the literature for teachers to deal with student misbehavior, described below.

First, there is the need for teachers to have a consistency of rules and expectations to help promote student self-regulation (Arbuckle & Little, 2004; Powell, Dunlap, & Fox, 2006). Second, teachers can use positive feedback

to address misbehavior while simultaneously encouraging students who are exhibiting model behavior (Hemmeter, Fox, Jack, Broyles, & Doubet, 2007; Stitcher et al., 2009). Third, the literature suggests that teachers can adjust the classroom environment, such as changing the physical arrangement of the room (Kwok, 2019; Ahrentzen & Evans, 1984; Weinstein, 1977). Carter and Doyle (2006) stress that changing the layout of the classroom can have direct implications on how the teacher wants to balance student freedom and classroom expectations. For instance, having large amounts of open floor space can promote students to interact with one another but may make rules about talking with one another more difficult to monitor. That is, flexible classrooms may require more "organizational work, more elaborate transitions, and more monitoring of student behavior than in traditional classrooms" (Carter & Doyle, 2006, p.360), whereas individual assignments in an open environment may be more difficult compared to structured rows (Bennett & Blundell, 1983). Relatedly, Butin (2000) suggests that periodic movement may be required to help students to concentrate, in large part because the chairs that they sit on often are non-cushioned and are sat on for periods of up to 50 minutes. Therefore, additional research is needed to show how teachers manage students within the elementary context, specifically, how they use age-appropriate strategies and the effectiveness of these strategies on student outcomes.

Stability ball chairs in classrooms. Research on stability balls indicates multiple physical and cognitive benefits (Bagatell, Mirigliani, Patterson, Reyes, & Test, 2010; Schilling, Washington, Billingsley, & Deitz, 2003). Jakubek (2007) found that stability balls helped individuals to gather sensory feedback and engage their whole body while sitting, which improved neuromuscular control, balance, strength, stability, and overall health. Few studies have investigated the use of stability balls in the classroom, but those that have indicate positive outcomes. Several studies replaced traditional chairs with stability balls and found that there were positive effects on student attention, time on task, in-seat behavior, and decreased amounts of hyperactivity (Bagatell et al., 2010; Bill, 2008; Schilling & Schwartz, 2004). In one of the most recent empirical classroom studies, Fedewa and Erwin (2011) conducted a single-subject design with eight fourth and fifth grade students who had Attention Deficit Hyperactivity Disorder (ADHD) and found that replacing traditional desks with stability balls over time led to increased students' level of attention, decreased levels of hyperactivity, and increased time on task. Furthermore, the teachers for these students preferred the use of stability balls in their classrooms, which has been a consistent pattern throughout the literature (Gaston, Moore, & Butler, 2016; Schilling & Schwartz, 2004).

There have been no studies, to our knowledge, that have explored the use of *stability ball chairs* as opposed to *stability balls*. Stability ball chairs have stable legs and are used for the purpose of long-term seating, compared

to stability balls which have no foundation. This difference could provide necessary support for a classroom environment, because there is less of a physical demand on the individual using the stability ball chair (which has been a drawback to using this type of equipment), yet it still allows the body to move and receive sensory feedback from the environment. Additionally, most of the studies that research the use of these balls in classrooms measured students with behavioral disorders, such as ADHD. Stability balls were initially introduced in the classroom as a sensory motor strategy to help students with behavioral disorders to increase engagement (Schaaf & Miller, 2005). More needs be learned about whether using stability ball chairs could benefit students in traditional classrooms. A recent study examined the use of stability balls in two mainstream second grade classrooms and found that students who used stability balls had improved attention spans compared to the control group who used traditional chairs (Gaston et al., 2016). However, this study had a small sample size and the authors mentioned that the sample of students had an unusually low baseline score for hyperactivity, which could bias the findings. Furthermore, there has not been an investigation of how stability ball chairs impact the teacher. Most research focuses on the impact that the stability balls have on student outcomes and rarely investigates how using such furniture could impact the teachers' experiences.

Methods

This study took place in the 2016-2017 academic school year at North Elementary School[1] in a Southern California urban public-school district. This school includes grades 1-6, has just under half of the student demographic (46.4 percent) categorized as English Language Leaners, and nearly all students qualify for free and reduced priced lunch (93.8 percent). The school principal selectively chose one teacher, Ms. Barron, to participate in this study based on the grade level that she thought would best benefit from this research and because she was an experienced teacher who was flexible with additional things happening in the classroom. Ms. Barron is Caucasian, native to the area, and has been teaching for over ten years at that school. Stability ball chairs were purchased by the researchers, donated to the school, and distributed in Ms. Barron's second grade classroom of 28 students, 20 who consented to participate in this study. All students, regardless of consent, used the stability ball chairs, though data was only collected on those who consented. An initial lesson plan was presented to the class by the researchers on proper usage of the stability ball chairs. This included a discussion on how to appropriately sit and maintain these chairs, and ended with the creation of a classroom poster documenting these rules. Consented students were between the ages of 6 and 7 years with 9 girls and 11 boys. All students were of Latino/Hispanic decent and classified as English Language Learners.

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[1] Pseudonyms are used for the school and all participants.

This study collected three types of data from two sources to learn whether classroom furniture had an impact on student behavior. After a detailed search of the current literature, we were unable to identify any pre-existing instruments regarding this topic that were age appropriate. Therefore, each data collection instrument was designed by the researchers specifically for this project.

The first type of data was interviews collected from the teacher and students. We implemented a semi-structured teacher interview to learn about her experiences having stability ball chairs in her classroom. Interviews probe the benefits and difficulties of utilizing new furniture and gathered their opinions about how it impacted student behavior. Formal interviews were conducted at the beginning and end of the year with several informal interviews conducted throughout each field visit during the school year. Student interviews were structured in format and conducted at most three times throughout the year to gather their opinions in using or getting to use the stability ball chairs compared to their traditional chairs. The number of interviews ranged due to several students being absent on the days researchers were present. This type of data provided the students' perspective on whether the furniture personally impacted them and to see whether it aligned with the teacher's perspective. Interviews were transcribed verbatim.

The second type of data was student surveys, which took approximately ten minutes to gather student perceptions regarding the use of a different type of classroom furniture. Hard copies of the surveys were administered to the students one week prior to implementation of stability ball chairs and again at the end of the school year. The survey contained eleven questions that were rated on a 5-point Likert scale of agreement, shown in Appendix A. Survey questions were read aloud and completed as a class, with the researchers and teacher providing individual help as needed. Surveys were transferred onto an electronic Microsoft Excel spreadsheet and analyzed through SPSS.

The third type of data was classroom video, which gathered periodic observation of the classroom to determine whether there were changes in teacher behavior. These were recorded between January through July, approximately twice a month. This complemented teacher and student interviews by providing observational evidence of the impact of classroom furniture. A total of 1678 minutes were collected and transcribed, with 332 minutes of video including student in their traditional chairs (19.7 percent) and 1346 minutes of video with students in stability ball chairs (80.3 percent). All videos were initially reviewed to gather preliminary ideas of verbal teacher classroom management strategies.

The identified teacher codes were as follows: behavioral correction, positive narration, and attention getter. Each teacher code was then applied to a second review of the videos, including a transcription of what the teacher said, time stamp, and additional context as necessary. Unfortunately, after numerous attempts to create student codes of student behavior, there was no

consistent or consensus way to code it, though we anticipate that will be a generative area for future research.

Data Analysis

Once all data were collected, we used grounded theory and created analytic memos to qualitatively explore patterns by data (Creswell, 2013). We identified consistent statements across each type of data to determine how stability balls may or may not have impacted teacher and student behavior. Once significant statements were identified, they were examined for cross-over and similarities. Interrater reliability was used at this step and found to have a reliability rate of approximately 80 percent, which is substantial in magnitude. We also performed basic quantitative analyses through SPSS to calculate the difference in means between questions from the pre- and post-survey, and from the frequency of codes for teacher behavior.

Results

Student perspective. Quantitative analyses indicate that students prefer the use of stability ball chairs over their initial school chair. When surveyed to choose which chair they preferred, all students picked the stability ball chair (n=20). Two additional questions from the survey provided some insight as to why students had this preference. First, students, on average, increased in their belief that the stability ball chair (mean=4.64) was more comfortable than the school chair (mean=2.05). Second, students felt more focused in the stability ball chair (mean=4.20) compared to their traditional chair (mean=3.00), on average.

Qualitative analyses complemented these results as three themes emerged from the data regarding students' experiences with the stability ball chairs: increase in learning, positive student affect, and decrease in student misbehavior. First, throughout student interviews, nearly all students (n=18) described an increase in learning from the use of stability ball chairs in one of two ways: increased focus and comfort. Students expressed that the stability ball chairs increased their ability to get work done, pay attention, and concentrate. For example, Juan explained, "it helps us learn because we get to bounce on it and then we kind of pay attend to our teacher more" (Personal Interview, June 7, 2017). Daniel also expressed a similar sentiment: "Because the bouncing helps me concentrate and then I can see and then I can see which one I am missing [referring to missing letter or number in an assignment]" (Personal Interview, June 7, 2017). Students indicated that the ability to move, in particular, was what made them focus more in class.

Feelings of comfort, specifically the softness of the stability ball chair, was also discussed by 14 of the students as supporting their learning. For example, when a student was asked about how the stability ball chair helped her to learn, Rosa replied, "because it makes me feel comfortable so I can do my work" (Personal Interview, May 17, 2017). This comfort was reiterated by other students who said, "my chair stability ball chair is comfortable and

I sit down correctly, and I write" (Stephen, Personal Interview, June 7, 2017) and "I feel good because it's [stability ball chair] soft and the other ones [typical chair] weren't soft like these ones" (Sheila, Personal Interview, June 7, 2017). These statements of how the stability ball chair aided their learning was contrasted with students' descriptions of their traditional school chair, which often included adjectives such as "hard," "uncomfortable," "hard to move," and "hurt their back."

Second, just over half of the students also described how the stability ball chair gave them with a positive affect while in class, often in using the terms "happy" and "good." For instance, one student discussed how the stability ball chair "makes me feel happy" (Daniel, Personal Interview, June 7, 2017). Two students in separate interviews said, "I feel good," when sitting in their stability ball chairs (Marcus & Luis, May 17, 2017). One student discussed the positive affect of others by explaining "they feel good in their chair" (Maria, June 7, 2017). These instances illustrate how the chairs positively impacted the students' overall mood.

Third, students discussed positive behavioral shifts of other students when using the stability ball chairs versus their traditional chairs. Nearly all of the students explained how they noticed positive changes in other students when they used the stability ball chairs. For example, Billy explained, "Sometimes Samantha used to get into trouble a little and now she doesn't" (Personal Interview, June 7, 2017). Many students broadly stated with little description that their peers behaved better when they were in their new chairs, indicating that they noticed other students seemed to improve with the use of stability ball chairs.

Teacher perspective. While the students clearly enjoyed the use of stability ball chairs, Ms. Barron's perspective was mixed. Throughout her interviews, she often spent time reflecting about the benefits and challenges of the stability ball chairs, not really having thought about it in too much detail beforehand. She began by discussing her observations of how her students used the stability ball chairs and then worked towards the issues and eventual impact of the chairs on her teaching.

Her initial observations primarily focused on the movement that the chairs provided for the students. From their ability to bounce on the ball to sliding their chairs because of the wheels, she explained how her students "are more active because of the chairs. They're bouncing but a lot of them are…really moving around a lot more than they were before" (Personal Interview, April 24, 2017). She recognized that these chairs provided the movement that they had intended, but realized how students needed an adjustment period to get comfortable using their new chair. During that time, she saw that students were getting "more comfortable and realizing they can move around" and that they were "exploring it and using it more as a toy" (Personal Interview, April 24, 2017). There was a novelty for the students to have such a unique chair that she did not fully account for and had to allow for some flexibility in how they experienced it.

As students got more comfortable, it presented Ms. Barron with several unexpected issues. She described how she was "okay with the bouncing, but when they're just rolling themselves all over the place, I'm like, 'Okay, I can't. That's not okay.' I think so far, that's our major issue" (Personal Interview, April 24, 2017). She felt that bouncing was an inherent movement,

> "that you're just going to have to get used to that, but I think my biggest thing was the ability to move around. So as long as I don't know maybe give them a chance to kind of zoom around a little at the beginning…. I don't know if that would help or not, but I think that's the part that's bothered me the most." (Personal Interview, May 31, 2017).

The wheels on the chair, in particular, was the main source of frustration for Ms. Barron. While there was a lock on one wheel, it was not sufficient in limiting much movement and students had easy access to unlock the wheel lock.

As a result, Ms. Barron realized that she had to create better classroom systems to make sure the movement was not distracting:

> I told them today, 'If they moved around too much or if they like spun in their chairs, I have to give their chair a time out.' I think if I just sort of put in place some of the rules that I would like for them to follow in the chairs and give them a consequence for it, then I think the usage will be better. (Personal Interview, April 24, 2017)

She realized that the students may not have been mature enough to use the chair solely for its intention and she had to more directly monitor its use. In particular, she felt the need to create a consequence to limit chair movement and create a better classroom atmosphere. She believed that teachers with these chairs: like anything else, you have to make it a routine and you have to make it a rule and you know there's consequences. If you don't use it right…I'll just put the chair on time out for that portion of the day or a whole day. (Personal Interview, April 24, 2017)

Despite this issue, Ms. Barron was consistent in the overall impact of the use of stability ball chairs:

> "I don't see any negative side effects really…. I definitely don't think it's detracting from their instruction or their work completion, so I mean I haven't seen any negative side effects" (Personal Interview, April 24, 2017).

Even with some frustration, she stated that there was little downside to incorporating the stability ball chairs into her classroom. She had to get accustomed to some differences in student movement and had to create an additional consequence, but that did not appear to have a major impact on her perception of the chairs. Even at the end of the year, she said:

> I haven't seen any negative impacts. Nobody's been constantly playing on them. They've been still getting their work done. I would guess for this time of the year they are...it is kind of hard to be focused and they have been pretty focused. Some of the teachers have come in here commented how relatively quiet they are compared to like their classroom, which is probably a good thing

at this point in the year. (Personal Interview, May 31, 2017)

As a result, she felt that the chairs kept "the same amount [of misbehavior] if not improved. I haven't seen anybody drop off at all. I mean if it's an endorsement I would I would continue using them in the classroom" (Personal Interview, May 31, 2017).

When probed about individual student behaviors, particularly of students who were more challenging, Ms. Barron did recognize some subtle benefits:

> I think Jorge has been working a lot more like he'll stay in his seat a lot more. He's one who tends to drive his seat around but he's in his seat more so I think from behavior standpoint he's probably been improved with the chairs. He'll sit there. He may not be doing the work but at least he's kind of sitting there. He'll play with his crayons but he's in his space probably more than he was before. I think Shaquille was getting more work done. I had him on a behavior plan so I don't really know which but combined he was getting more work done. I think the kids really like them…. My other busy bodies...I think Juan was working in his chair. I guess maybe the only one who didn't benefit from it was Stephen because he's constantly out of his seat. (Personal Interview, May 31, 2017)

Teacher behavior. Ms. Barron incorporated several different strategies to manage student misbehavior. Of all the classroom management actions coded, approximately 20 percent of the actions were positive narration, just under 12 percent were attention getters, and about 52 percent were behavioral corrections, with the remaining percentage coded as "Other." The ratio of positive narration to behavioral correction was approximately 2:5, or 40 percent.

When observing how the teacher managed student behavior before and after the stability ball chairs, there appeared to be a difference, shown in Table 1. Per minute, Ms. Barron used positive narration more often and behavioral corrections less often when the students were in traditional chairs. While there was a change in frequency, qualitative analyses indicated only a substantial change in one of these actions: behavioral corrections. Below, we detail each of these types of strategies to manage student behavior.

Positive narrations. Ms. Barron found ways to deal with student misbehavior by using positive narrations. About a fifth of her overall teacher actions were coded as such, and was seen used consistently throughout the year. Specifically, she identified when students were using correct behavior and then positively narrated the observed behavior. She did so in a similar manner with or without the stability ball chairs. She focused on those who

Table 1

Percentage of Classroom Management Strategies Per Minutes Before by Type of Chair

	Positive Narration	Attention Getters	Behavioral Correction	Other
Traditional Chairs	33.75	14.58	42.08	9.58
Stability Ball Chairs	16.52	11.21	54.78	17.49

had followed expectations and publicly told the class who was on task. The publicity of the statement was intended to redirect distracted students and reiterate to them what how they should be acting in that moment. In multiple instances, she would repeat the same behavior of several students: "Juan is writing, Stephanie is writing, Madelyn is writing, Jorge is writing, Miguel is writing" (Video Recording, April 24, 2017). In other instances, she would similarly narrate multiple students but state different model behaviors that were exhibited: "Jairo is sitting crisscross applesauce. Amelia has her hands in her lap. Cristobal has his eyes to the front. Miguel is sitting very quietly" (Video Recording, May 10, 2017). Instead of calling out the children who were not listening, Ms. Barron pointed out the ones who were in order to encourage the others to follow along. Children were sitting on the carpet listening to the teacher read but when several students were distracted, Ms. Barron chose to positively narrate to reengage student attention.

As part of positive narration, Ms. Barron occasionally provided a small, tangible reward. "I just gave Shaquille a goldfish because he read a book to me" (Video Recording, May 15, 2017). These types of statements were infrequent, but similarly enacted to announce to the class as a motivation for everyone to complete the task at hand. Sometimes she gives out stickers, smiley faces, or in this case goldfish crackers.

Behavioral corrections. Ms. Barron also managed the classroom by directly telling misbehaving students either what actions they were doing incorrectly or what they should have done to correct their behavior. Just over half of her actions were coded as behavioral corrections. These corrections or desists offered quick reprimands for misbehavior that was different in tone and directness compared to positive narrations, and was not necessarily always related to misbehaving with the stability ball chair. In one instance, Ms. Barron was reading to the students, but Silas was yelling out a response during someone else's turn. Ms. Barron responded to him in the moment by saying, "Silas, we're going to use our conversation voice, we're going to listen respectfully, we're going take turns and build on each other's ideas" (Video Recording, April 24, 2017). She called him out by name, possibly because he was distracting the whole class, and told him how he should exhibit model behavior.

In another example, Ms. Barron was quick to call out students in how they could exhibit model behavior:

> I need Amelia on her bottom, I need Jorge to have his eyes up here. No, I'm doing this right now and if you don't do writing with me I can't give you a happy face. You have to the count of three. Three, start moving that way, two, no? Okay well you can definitely not stay on green either, so you will be on yellow. So, if you're here on Friday you don't get Fun Friday. (Video Recording, May 17, 2017)

Ms. Barron told individual students what she needed them to do. Additionally, she mentioned several classroom systems that helped to

promote model behavior as a way to motivate students to quickly listen to her instructions. She threatened to punish the whole class by cancelling a fun event so as to have individuals behave for the collective whole.

In an example specific to the use of the stability ball chairs, Ms. Barron called out a student who was using the chair in an inappropriate manner: "Uh, that is not okay. I am about to take that chair away. That is not okay. That is not how we use our chairs" (Video Recording, May 15, 2017). Ms. Barron wanted to remind the student that if he was not following the chair rules, then he would receive a consequence of switching the stability ball chair back to a traditional chair. These types of warnings and in some instances, enforced consequences, were more common, as she tried to maintain control over how the students used their stability ball chairs. She was always quick to call out a misbehavior from a student that she thought could be physically harmful, such as falling off the chair.

Attention getters. One strategy that Ms. Barron consistently used was systematic calling of students' attention. Whenever a large portion of the class was off task, talking, or she wanted to make sure everyone was listening to what she had to say, she would use one of a handful of attention getters. There was little difference in how she got students' attention over time, even though approximately 12 percent of her actions were coded as such.

There were two call and response attention getters that she frequently used similarly before and after implementation of the stability ball chairs. The first would have her say, "Class, class" and the class would respond, "Yes, yes." The other was when she said, "Waterfall" and the students would respond by making the noise, "Shhhhh…." There was a clear indication that these strategies had been rehearsed and used multiple times with the students as each time they were used, nearly all students would respond accordingly.

There were several other attention getters that were less consistent and did not require a verbal response from students. Ms. Barron would count down from a number, generally from five, tell students to "freeze," or simply provide loud shushes. These actions appeared to be less effective, as she would have to repeat herself multiple times.

Discussion

This study explores the impacts of incorporating "innovative" furniture in an urban elementary school. From interviews of students and the teacher, as well as video observations of teacher behavior, three findings are suggested from the use of stability ball chairs below.

First, the teacher and her students preferred sitting on stability ball chairs over traditional school chairs. While students' preferences were unsurprising, these results provide initial evidence from the students' perspective and provides complementary evidence regarding what could be learned from this audience (Montuoro & Lewis, 2015). As for teachers, these results

support prior studies (Gaston et al., 2016; Schilling & Schwartz, 2004) about how they prefer the use of stability ball chairs for their students. However, the use of stability ball chairs in the classroom was not without challenges in the classroom. Ms. Barron complained how the design of the chair, most notably the wheels, was problematic for her and a primary cause of student misbehavior. Despite continued warnings and reminders for this inappropriate use of the stability ball chair, the temptation to move was too great for several students of this age. This suggests that while these stability ball chairs were preferred, a better designed one without wheels would be more appropriate for a classroom setting, or the teacher could establish specific rules, expectations, and consequences from the onset (Bullough & Richardson, 2015).

Second, stability ball chairs could have positive impacts on their learning, behavior, and affect. Results indicate that the ability to bounce on the stability ball chair and increased comfort helped them to concentrate, pay attention, and complete class assignments more effectively. Ms. Barron also mentioned that some of her challenging students seemed to be more productive and focused over time when using their stability ball chairs. Providing comfort and the ability to bounce through classroom furniture may help students that have difficulty concentrating at a typical desk and chair to remain active yet engaged. These results complement the multiple findings that similarly state the impact of chairs on student attention (e.g., Fedewa & Erwin, 2011), while extending knowledge about the positive impact of stability ball chairs on self-reported learning and affect. Future studies could replicate this study incorporating a pseudo-experimental design, similar to Gaston and associates (2016), to identify whether similar results are found.

This second finding has implications for schools and districts to consider methods of improving elementary student behavior, specifically those who are English Language Learning. Particularly for school districts that have additional funding and want to consider alternative ways to engage students, the use of stability ball chairs could be one option. Having resources such as classroom furniture (e.g., stability ball chair) that can help support students' attentiveness through appropriate movement and general comfort could be particularly beneficial for urban children who experience higher stress and challenges related to experiencing poverty.

Third, Ms. Barron used several strategies to manage student behavior that coincide with effective actions according to the previous literature (Stitcher et al., 2009; Kwok, 2019). However, she used different amounts of these strategies before and after the use of stability ball chairs. Ms. Barron used less positive narration and more behavioral corrections once students were using the stability ball chairs. While the difference between a positive narration and behavioral correction are subtle, it does indicate that the teacher had to be more direct and specific with student misbehavior. Possibly because the stability ball chairs were novel for everyone, Ms. Barron felt it was

necessary to call out individual misbehavior to prevent any accidents, which she mentioned happened often as students would fall out of their stability ball chairs. In addition, Ms. Barron had to create a consequence for misuse of these chairs, suggesting another way in which the teacher's actions changed. Ms. Barron seemingly adjusted her behavioral corrections in this "new environment" but did not similarly do so with her other classroom management actions, prompting the use of behavioral corrections all the more. Even though using stability ball chairs was hypothesized to aid the physical arrangement of the classroom (Bagatell et al., 2010), the decrease of positive narration or the consistent use of attention getters may have limited its total impact. The balance of each of these types of classroom management actions could be an area for future research. Future research should also assess whether or not, after a period of time with students using stability ball chairs if the types of teacher behavior management strategies change; perhaps exploring whether there is a novelty period when stability ball chairs are first introduced that impacts strategies used.

This third finding has implications for teacher professional development regarding the use of new furniture. While there may be positive student impacts, teachers undoubtedly have to adjust how they manage their classroom. Administration could inform teachers of potential challenges that students could encounter with the change in furniture as well as pedagogical ways to troubleshoot these challenges. Future studies could replicate this study in other contexts or extend learning by determining whether there are similar impacts in non-urban schools, non-ELL, or in other elementary grade levels. There could be additional exploration of whether there were differences in other student and teacher outcomes, such as academic achievement or teacher stress.

Conclusion

This mixed methods study explores the use of stability ball chairs through surveys, interviews, and video observation. Findings indicate both a teacher and student preference for using these types of chairs, particularly in comparison to their traditional charge, with some self-reported evidence that it has some positive impacts on learning, behavior, and affect. With these findings, we hope that districts, particularly those that are underserved, could consider the use of stability ball chairs within elementary classrooms as one creative way of promoting not just movement but helping with overall classroom management. While there still needs to be additional research on this type of furniture, this is as one way educators could change the physical environment to promote positive impacts for often struggling classrooms. ∎

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APPENDIX A

Student Demographics Survey and Pre- Stability Ball Chair Survey

1. How old are you? _____

2. What grade are you in? _____

3. What is your Racial or Ethnic background: (circle all that apply)
    American Indian or Alaska Native
    African American/Black
    Asian Native Hawaiian or Pacific Islander
    Latino or Hispanic
    White

4. What is your gender? (circle one)

                      Boy   Girl

Please respond to the following statements indicating whether you agree or disagree with each statement listed below by checking the appropriate box to the right of the corresponding statement.	1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
1. I learn my class.	1	2	3	4	5
2. My classroom chair is comfortable.	1	2	3	4	5
3. My body is supposed to stay still while sitting on my chair.	1	2	3	4	5
4. Moving helps me learn.	1	2	3	4	5
5. Some of the students in my class are disruptive.	1	2	3	4	5
6. I like my desk and the chair I sit on.	1	2	3	4	5
7. My classroom is a friendly place.	1	2	3	4	5
8. My classmates distract me from getting my work done.	1	2	3	4	5
9. I feel focused when sitting in my chair	1	2	3	4	5
10. I feel ready to learn when I sit in my chair	1	2	3	4	5
11. I wish I could move my body more while learning in class.	1	2	3	4	5