Making Room for Play: Evaluating the Implementation of Play-Based and Academically Rigorous Pedagogy in Kindergarten

Portland Public Schools, June 2022

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Is there a paradox between play-centered, developmentally appropriate learning practices and more academically rigorous, prescriptive curriculum aimed at meeting assessment benchmarks? These seemingly antithetical methods of instruction have sparked debate regarding their relative effects on students' learning outcomes, with many landing on the side of academic rigor over play. In this study, a group of kindergarten and first grade educators (the Kindergarten Innovation Cohort or "Cohort") received guidance and stipends to pilot instructional techniques incorporating both developmentally appropriate and academically rigorous practices. We surveyed educators and observed classrooms twice throughout the year. We found that incorporating rich, meaningful learning experiences within academically focused curriculum positively impacted students' learning and classroom experiences, as well as educators' teaching and classroom management practices.

Purpose

Is there a paradox between play-centered, developmentally appropriate learning practices and more academically rigorous, prescriptive curriculum aimed at meeting assessment benchmarks? These seemingly antithetical methods of instruction have sparked debate regarding their relative effects on students' learning outcomes, with many landing on the side of academic rigor over play (Bassok et al., 2016, Miller & Almon, 2009; Alle-Hernon et al., 2021). Researchers and educators have recently begun to question this paradox, testing the hypothesis that there is room for intentional, structured play-based instruction within rigorous academic curriculum (Allee-Hernon et al., 2021). Recent evidence suggests that the use of both pedagogical methodologies may lead to a wider range of learning improvements for more students (Allee-Herndon et al., 2021; Pyle et al., 2018).

In this study, a group of kindergarten and first grade educators (the Kindergarten Innovation Cohort or "Cohort") received guidance and stipends to pilot instructional techniques incorporating both developmentally appropriate *and* academically rigorous practices. We found that incorporating rich, meaningful learning experiences within academically focused curriculum positively impacted students' learning and classroom experiences, as well as educators' teaching and classroom management practices. On average, educators reported feeling more confident in their ability to implement innovative play-based practices in their classrooms after participating in the Cohort. Compared to before the pilot, educators reported more time on child-selected activities, teacher-directed small group activities, and incorporated more play-focused activity centers in their classroom. After the pilot, observed students were given more opportunities to play and exercise autonomy, engage with their learning and each other, and build relationships.

Theoretical Framework

Play is a natural mode of learning in early childhood that promotes the development of socioemotional and creative problem-solving skills necessary to support student well-being, and, if used effectively, can foster an environment of curiosity and exploration to set the stage for successful academic learning (Bodrova et al., 2013; Polakow Suransky, 1982). Children experience significant short- and long-term gains with respect to both developmental and academic learning outcomes with the use of play-based compared to traditional teaching methods (Pyle et al., 2018). In fact, when receiving play-based pedagogy, as opposed to didactic approaches, four-to-five-year-olds tended to outperform their peers in a number of areas including mathematics and numeracy (Presser et al., 2015; Pyle et al., 2018), literacy (Allee-Herndon et al., 2021; Pyle et al., 2018), and other general cognitive outcomes (Pyle et al., 2018). Furthermore, evidence suggests that the effect of play-based pedagogy results in significant improvements for students from vulnerable populations (i.e., lower socioeconomic status; Allee-Herndon et al., 2021; Kumaş & Ergül, 2021).

Beyond these differences between pedagogical approaches, researchers have highlighted marked improvements in learning outcomes for students experiencing both developmental and academic approaches (Allee-Herndon et al., 2021). Specifically, Allee-Herndon and colleagues (2021)

observed that the use of didactic strategies lead to increases in receptive vocabulary skills, while play-based strategies lead to more growth in reading skills. Given the differential effects of the type of pedagogy on learning outcomes, it is reasonable to suggest that an approach where both play-based and didactic strategies are integrated into instruction may provide the best possible learning outcomes for a wider range of students.

Play-Based Learning, Student Choice, and Self-Regulation

Play-based pedagogy is child-directed learning, scaffolded or facilitated by educators, that introduces opportunities for students to make decisions, and has the purpose of supporting student discovery and exploration through play with a goal of learning a specific set of skills (Fisher et al., 2013). To be implemented successfully, it requires educators to be well-versed in both academic content and standards alongside play-based strategies to design lessons that elicit students' natural tendencies toward play while ensuring the achievement of academic goals. This method of teaching is intentional and purposeful in design such that it aims to evoke creative, investigative, and critical thinking patterns in children that facilitate development and academic achievement throughout their lives (Allee-Herndon et al., 2021).

Early qualities that children develop that lead to the best possible learning outcomes are not necessarily focused on an amount of learning in one specific topic area, but rather the processes of how a child approaches and engages with learning (Conley & French, 2013). The essential pieces of both learning and play concern process over product, and play-based learning capitalizes on both aspects to allow children autonomy over their learning and extend their understanding and interest in academic subject matter (Allee-Herndon et al., 2021; Weisberg et al., 2013). Beyond specific academic gains for students, there are also benefits for children to further develop self-regulation skills necessary for academic success (Bodrova et al., 2013). Play-based classrooms foster children's spontaneous play that encourages independence and learning that is child-initiated. The hallmark of this pedagogy is that children are empowered to be active learners who learn naturally by interacting with their peers and their physical and social environments (Keung & Fung, 2021).

The Present Study

Prior to the 2021-22 school year, educators at school sites across the district applied to participate in the Cohort. Upon selection, participants began developing their target areas of instruction for the pilot with other Cohort members in their schools. Cohorts at each school received stipends ($1,500) to purchase supplies. Our evaluation began in the fall, when educators were beginning to explore instructional practices to implement in their classrooms and continued throughout the spring.

We explored the impacts of administering academically focused and developmentally appropriate instruction on a) students' learning and classroom experiences and b) educators' teaching and classroom management practices. We expected that the developmentally appropriate practices would significantly improve students' engagement, collaboration, and

relationships with peers and educators. We also expected to see differences in the types of activities that educators spent class time on, classroom design, educator's beliefs about kindergarten, and educator self-efficacy. To test these hypotheses, we conducted pre- and post-implementation surveys and classroom observations in fall and spring.

Methods

Participants

The Kindergarten Innovation Cohort included 21 kindergarten and two first grade educators across eight different elementary schools within a large school district in the Pacific Northwest. Participants were all female or nonbinary, or preferred not to answer (Figure 1); and identified as white, Asian, Latinx, or preferred not to answer (Figure 2).

Seven of the 23 classrooms were identified as dual-language immersion classrooms, of which, six were taught predominantly in Spanish and one in Vietnamese. There were 456 students in the pilot classrooms (Figures 3 and 4).

Procedure

Data collection activities occurred in fall 2021 (round one) and spring 2022 (round two). During both rounds, educators completed a survey regarding their beliefs about kindergarten, general classroom practices and design, and implementation activities and experiences. Following each round of the educator survey, two researchers conducted observations in each classroom using a rubric to gather information around students' levels of

Figure 1. Educator Gender (n = 18)

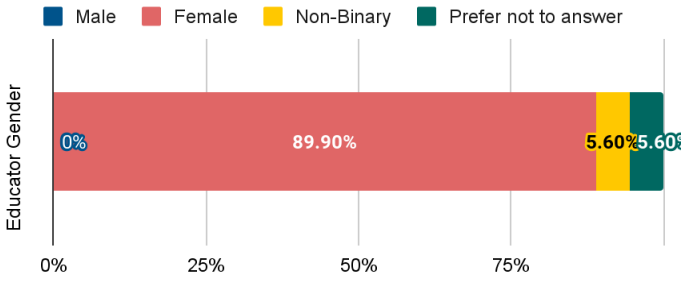


Figure 2. Educator Race/Ethnicity (n = 18)

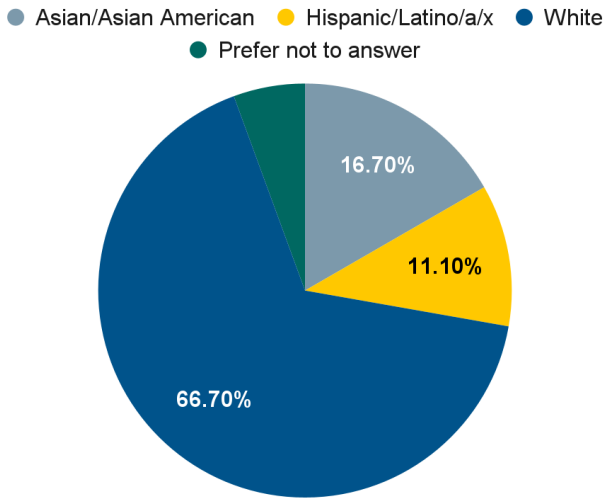


Figure 3. Student Gender (n = 456)

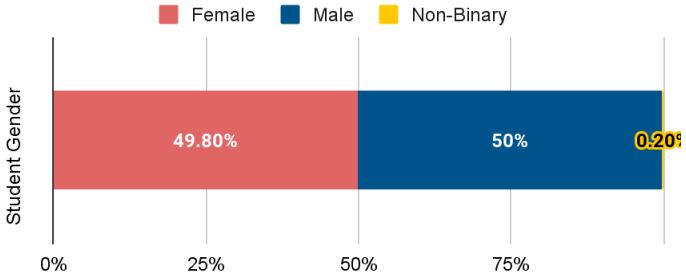
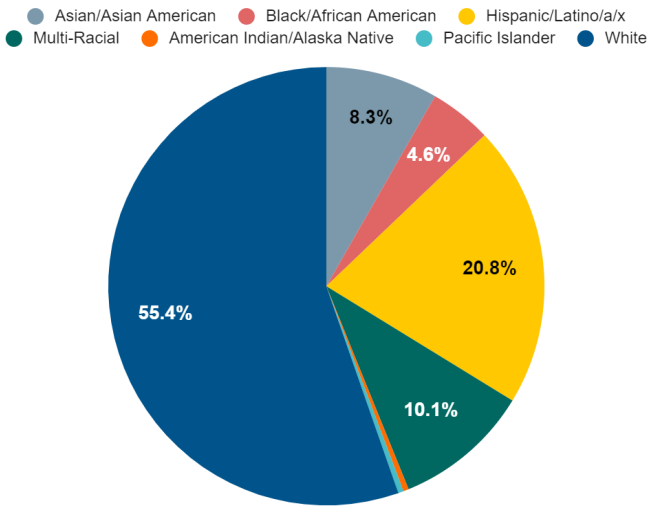


Figure 4. Student Race/Ethnicity (n = 456)



engagement, peer-to-peer collaboration, and relationships between students and educators.

Materials

Educator Survey

Educator pre- and post-surveys measured changes in the Cohort's beliefs and experiences at the start and end of the innovation. The surveys included measures adapted from the Early Childhood Longitudinal Study-Kindergarten (ECLS-K; NCES, n.d.) Teacher Questionnaire including self-reported daily class activities structure, classroom environmental design, and beliefs about kindergarten.

Reported Daily Activities Structure

The Cohort estimated the amount of time students spent on specific activity types (teacher-directed individual, whole class, and small group, and child-selected activities) on a 4-point scale ("30 minutes or less" to "3 hours or more").

Classroom Environmental Design

The Cohort selected the activity centers (e.g., Reading Center, Dramatic Play Corner, etc.) currently found in their classrooms.

Educator Perceptions

We elicited the Cohorts' beliefs about kindergarten (e.g., "most children should learn to read in kindergarten"). Participants responded to items on a 5-point agreement scale (pre-survey a = .78; post-survey a = .70). Educators also responded to items around their perceptions of and experiences in the pilot (e.g., the difficulty of implementation, self-efficacy, etc.).

Classroom Observation Ratings

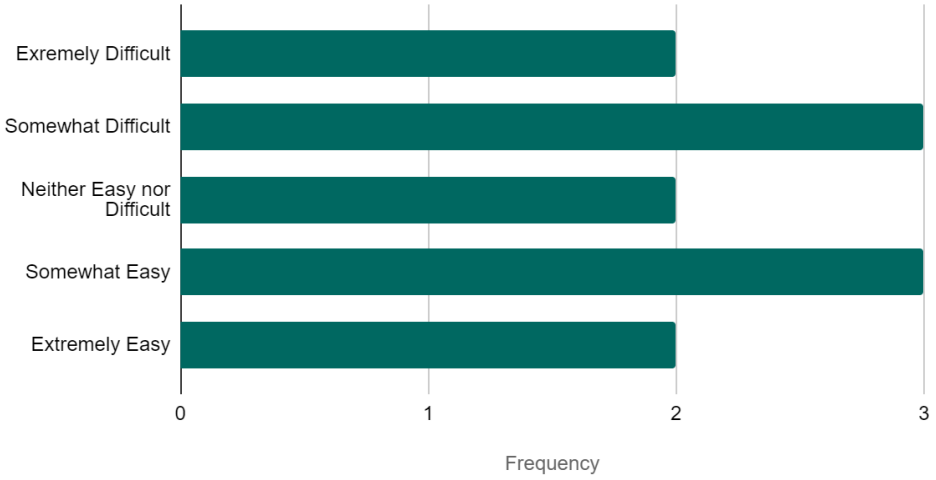
We adapted our classroom observation rating tool from the Reformed Teaching Observation Protocol (Sadawa & Piburn, 2000). The scale included 20 items across four subscales: lesson implementation, student engagement, student collaboration, and student-teacher relationships (a range = .76 - .85). Observers rated items using a 6-point frequency scale ("never occurred" to "very descriptive").

Results

Educator Post-Implementation Experiences

After the pilot, educators rated the level of difficulty they experienced and their self-efficacy. Educators reported that the pilot was neither difficult nor easy (M = 3.0, SD = 1.41; Figure 5); educators reported feeling confident in their ability to implement innovative play-based practices in their classrooms (M = 3.37, SD = 0.65).

Figure 5. Educators' Perceptions of the Difficulty of Implementation (n = 12)



Educator Teaching Practices, Classroom Design, and Beliefs

The largest difference we observed was the increase in the percentage of educators who reported spending more time on child-selected activities (46 percentage points): before participating in the Cohort, every educator surveyed (100 percent) reported spending one hour or less on child-selected activities during a typical class day; after the pilot, only 54 percent reported spending one hour or less on child-selected activities. Educators also spent more time (an increase of 13 percentage points) on teacher-directed small group activities (Figures 6A/6B).

Figure 6A. Percentage of Educators Indicating Amount of Class Time Spent on Activity Types: Round 1 (n = 17)

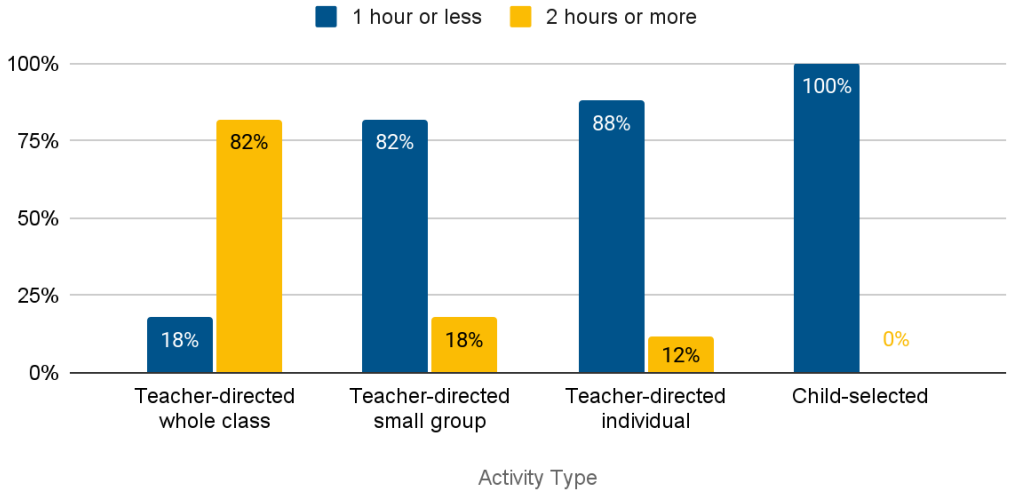
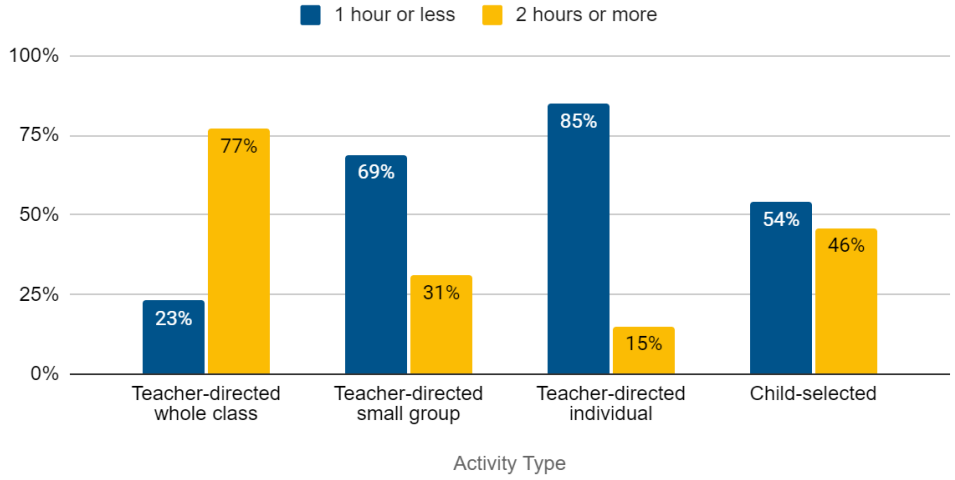


Figure 6B. Percentage of Educators Indicating Amount of Class Time Spent on Activity Types: Round 2 (n = 13)



Educators reported using more play-focused activity centers in their classrooms after the pilot. The largest increases, ranging from 21-34 percentage points, were observed for activity centers and interest areas including writing centers, water or sand tables, science/nature areas with manipulatives, dramatic play areas, and art areas. We observed a decrease in the percentage of educators (12 percentage points) who reported having designated listening centers in their classrooms, which we did not consider play-focused areas (Figure 7).

We observed no meaningful differences in educators' beliefs about kindergarten between rounds one and two (Figure 8).

Figure 7. Percentage of Educators Indicating Different Activity Centers or Interest Areas in Their Classrooms by Round of Data Collection

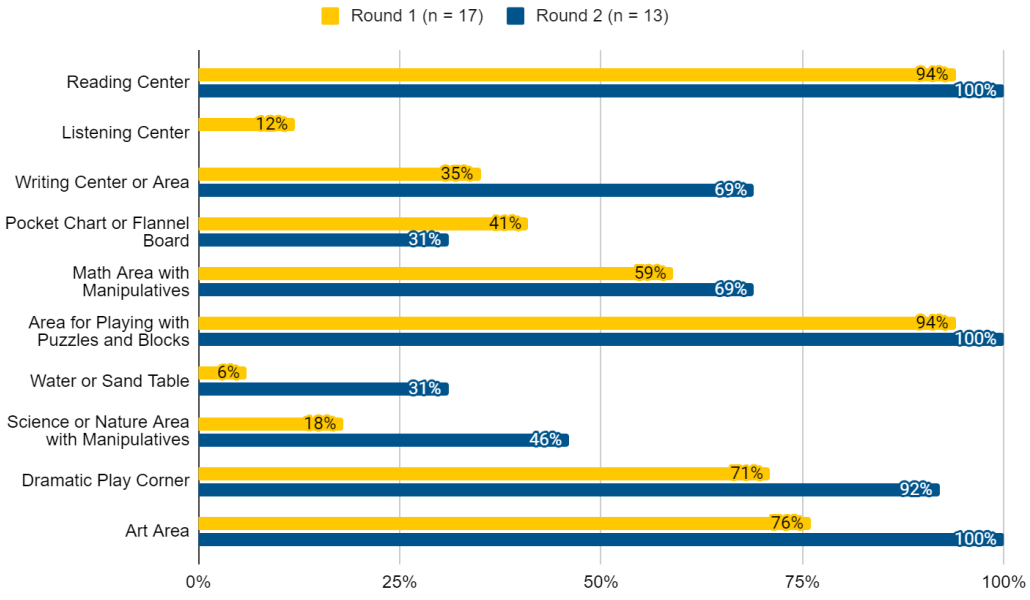
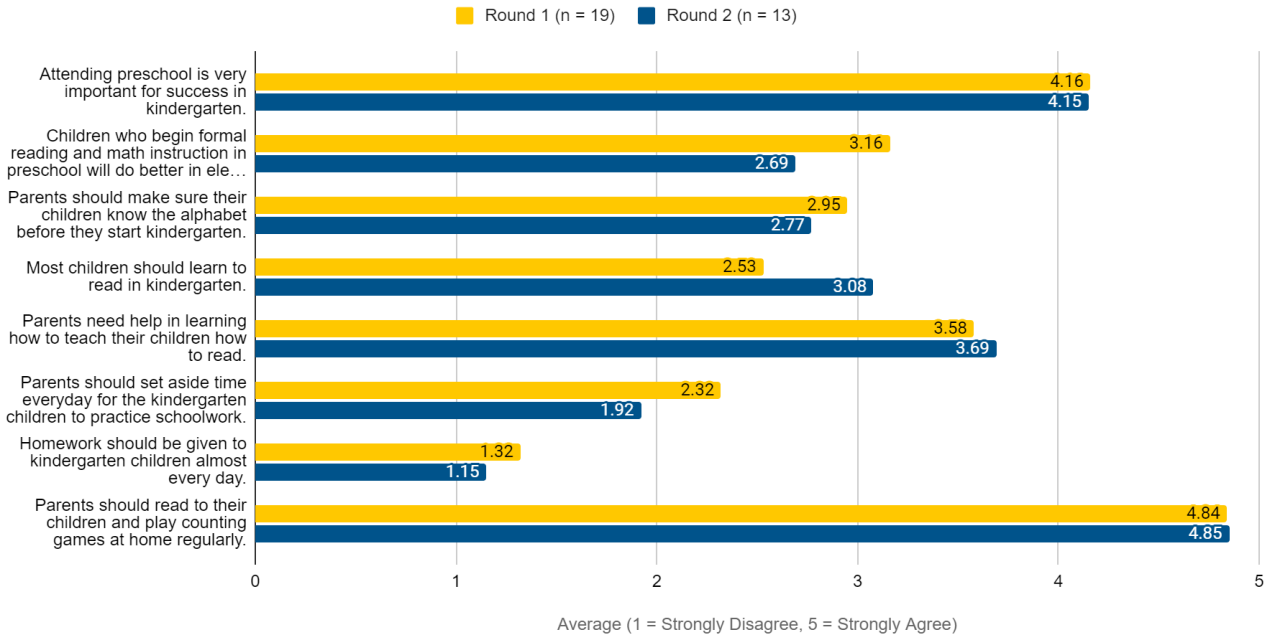


Figure 8. Comparison of Average Educator Beliefs about School Preparedness in Kindergarten by Data Collection Round



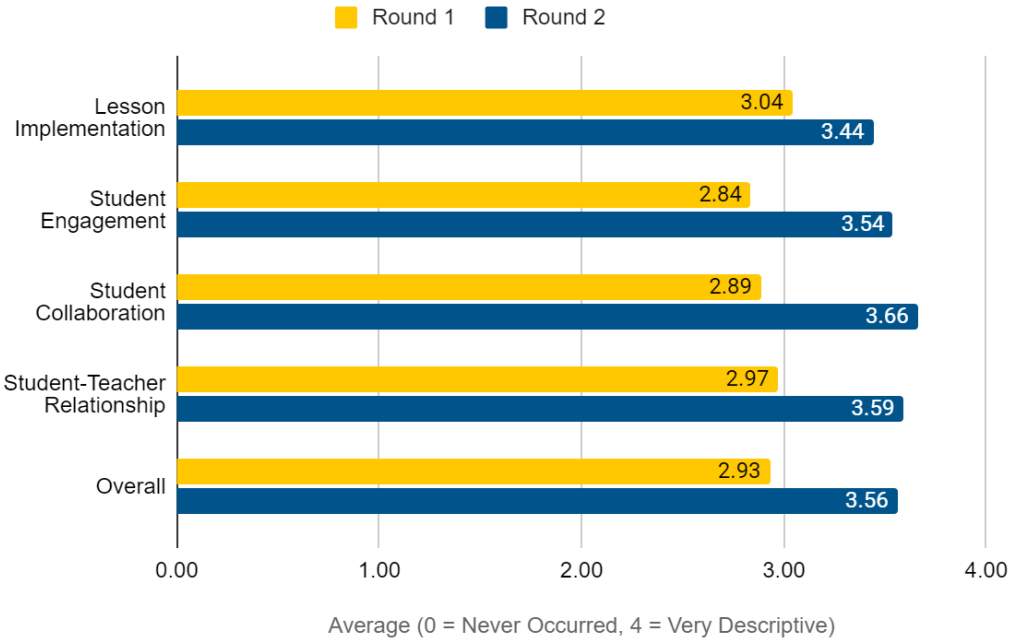
Changes in Students' Implementation Experiences

We conducted paired samples t-tests on our observation rating scale data to examine differences between students' experiences in the classroom pre- and post-implementation (Table 1) and found that, on average there were statistically significant ($p<.01$) increases in overall classroom ratings, and across all four subscales of the classroom observation rating tool (Figure 5). Observer ratings indicated that after the pilot, students were given more opportunities to make choices, explore, move, and students felt more comfortable taking academic risks throughout the observed lessons. Students also appeared to be more active participants in the lessons, expressed joy and excitement, displayed higher levels of motivation, reflected on their learning, and tried multiple problem-solving strategies across rounds. Student collaboration improved: observers saw more teachers naming and modeling interpersonal skills for students collaborating, students getting more opportunities to work together during lessons, and more students talking with their peers, seeking out peers as resources, and respecting one another while working in groups. Finally, observers noticed improvements in student-teacher relationships such that, students more frequently asked questions of their teachers, teachers consistently reinforced learning behaviors of students, scaffolded when necessary, and demonstrated active listening when communicating with students.

Table 1. Paired Samples T-Test Results for Average Classroom Ratings Across Round 1 and 2 of Data Collection (n = 44).

	df	t	p
Lesson Implementation	41	-2.70	0.01
Student Engagement	41	-5.42	< .001
Student Collaboration	41	-5.84	< .001
Student-Teacher Relationship	41	-4.87	< .001
Overall Classroom Ratings	41	-5.33	< .001

Figure 9. Average Classroom Observation Ratings Across Data Collection Rounds (n = 44)



Significance

Our results suggest that integrating play-based pedagogy within academic instruction has a positive impact on educators' instructional and classroom management practices, and students' learning experiences. Between fall and spring, educators reported incorporating more playful activity centers in their classrooms, and nearly half reported devoting more class time to child-initiated and small-group activities, both of which create opportunities for play throughout the day. Educators also reported feeling confident in their ability to implement play-based practices, and that it was neither difficult nor easy for them to do so. We observed no changes in educators' beliefs about kindergarten across the school year. Within the classroom, observers

noted significantly more play opportunities for students, and improvements in students' engagement with learning, collaboration with peers, and relationships between educators and students from fall to spring.

This study did not explore the impacts of play-based learning on students' academic performance. Similarly, we did not explore comparisons with classrooms utilizing only traditional methodologies. Therefore, we cannot draw conclusions about the effectiveness of play-based, academic instruction against other methods. However, our findings align with postulations of other researchers that academically playful curricula may improve students' learning across a wider range of outcomes (Alle-Herndon et al., 2021; Pyle et al., 2018). We will continue to follow the students and teachers who participated in this Cohort, to examine the effects of integrating play-based, academic instruction on the students' short- and long-term academic achievement and the teachers' practice.

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