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ABSTRACT

Research Findings: This study investigated the feasibility and acceptability of a coaching intervention to enhance kindergarten teachers' ability to design and implement active playful learning experiences that are informed by evidence from the science of learning. The 6-month intervention was delivered through classroom-embedded coaching and workshops focused on guided play, a category of active playful learning that balances student agency with teacher facilitation as students pursue clearly defined lesson goals. Instruction continued to align with local standards and was designed to be meaningful and engaging to students. The quality of the coaching experience, teachers' perceptions of the intervention and playful learning, and teacher-reported student outcomes are reported from 30 classrooms. Overall, teachers' qualitative and quantitative results indicate that they adopted favorable views on the implementation and outcomes of play-based learning, suggesting the feasibility of guided play as an active playful learning pedagogical approach. *Practice or Policy:* The study details the development and implementation of a state-wide research-practice-policy partnership to increase active playful learning across New Hampshire in response to a state mandate. The results highlight guided play as an evidence-informed playful learning pedagogy, and instructional coaching as an effective delivery mechanism, to enable teachers to satisfy the state-wide mandate for play-based kindergarten.

In response to state funding for full-day kindergarten, New Hampshire amended state law (RSA 193-E:2-a) to require play-based learning in kindergarten:

> Instruction in support of kindergarten standards shall be engaging and shall foster children's development and learning in all domains including physical, social, cognitive, and language. Educators shall create a learning environment that facilitates high-quality, child-directed experiences based upon early childhood best teaching practices and *play-based learning* [emphasis added] that comprise movement, creative expression, exploration, socialization, and music. (Substantive Educational Content of an Adequate Education, 2018)

This mandate prompted the establishment of a research-practice-policy partnership to provide kindergarten teachers with professional development through instructional coaching to support the use of developmentally appropriate, play-based learning. Key stakeholders in this partnership included academic researchers, state agencies, and teachers and administrators. The researchers contributed an understanding of the science of learning and evidence-based active playful learning practices, as well as

expertise in young children's development and professional development for educators, to this partnership. The state contributed funding through its federal Preschool Development Grant to employ two full-time coaches. Participating teachers were active collaborators in the adoption of *active playful learning* (herefourth used as analogous to the legislation's term *play-based learning*) and its application to their curricula. This study provides a mixed-methods account of the partnership's initial implementation, drawing on experiences in 30 kindergarten classrooms from across New Hampshire that comprised the initial cohort of the coaching program during the 2019–20 school year. It investigates the preliminary feasibility of establishing active playful learning classrooms to offer deep learning experiences while maintaining alignment with required learning objectives and standards.

Justification for Play-Based Learning

How Children Learn Best

New Hampshire's legislative amendment aligns with a growing body of research from the science of learning, an interdisciplinary field that investigates the process of learning from the perspectives of psychology, neuroscience, and sociology, among others (Darling-Hammond et al., 2020; Hirsh-Pasek et al., 2022; Meltzoff et al., 2009; Sawyer, 2014). This research suggests six pedagogical pillars that characterize active playful learning. Children learn best in environments 1) where they are *active* with agency to explore and process the information they receive, 2) where they are *engaged* rather than distracted, 3) where information is *meaningful* and children can connect new and existing knowledge gained inside or outside the classroom, 4) where they collaborate during *socially interactive* activities, 5) where the learning is *iterative* with room for experimentation and trial-and-error, and 6) where the educational experience is *joyful*, not dull (e.g., Hirsh-Pasek et al., 2020, 2022; Nesbitt et al., 2023; Yannier et al., 2021; Zosh et al., 2018, 2022).

The value of *active learning* is well-established in psychology and education. Both Piaget (see Webb, 1980 for a review) and Vygotsky (1978) recognized the importance of children initiating learning in their environment, especially through social interaction. Empirical evidence also supports greater learning from active than didactic instruction across subject areas and development (e.g., Chi, 2009; DeCaro & Rittle-Johnson, 2012; Deslauriers et al., 2019; Hausmann & VanLehn, 2007; Martin & Schwartz, 2005; Skene et al., 2022; Yannier et al., 2021). For example, preschoolers learn more about a novel toy when they explore it without first receiving didactic instruction on one of its functions (Bonawitz et al., 2011).

Effective learning relies on student *engagement*. This can be challenging for young children (Hoyer et al., 2021; Wetzel et al., 2019), who may even be distracted by environmental features, such as classroom decorations (A. V. Fisher et al., 2014). As early as prekindergarten, children's engagement is related to current and future achievement (e.g., Nesbitt et al., 2015; Ponitz et al., 2009; Portilla et al., 2014; Robinson & Mueller, 2014; Williford et al., 2013).

Meaningful instruction enables learning because students recognize relevant connections between new and prior knowledge or skills, facilitating further transfer of this information to novel contexts (e.g., Darling-Hammond et al., 2020; Zosh et al., 2018, 2022). Deeper understanding emerges through this process (Novak, 2002). Students broadly experience meaningful learning when their classroom experience connects to knowledge gained in their family and/or community through culturally responsive instruction (e.g., Aronson & Laughter, 2016; Cherfas et al., 2021; Gay, 2000; Ladson-Billings, 2021).

A safe and supportive classroom environment helps facilitate *socially interactive* learning. Rogoff (2003) documented how children across the world learn by interacting with others. Ramani et al. (2012) offered empirical evidence of children learning from their peers based on the finding that four- and five-year-olds built more complex structures and exhibited more positive communication with each other when a block-building task was playful and focused on student agency, not adult-directed. Positive associations between children's opportunities to collaborate with peers and teachers and their

learning outcomes have been demonstrated across the early grades and content areas (e.g., Christopher & Farran, 2020; Hargrave & Sénéchal, 2000; Montroy et al., 2014; Nesbitt et al., 2015).

Children learn through an *iterative* approach, where knowledge is constructed through ongoing inquiry and hypothesis testing. For example, Schulz and Bonawitz (2007) found children's interest in this type of learning when they observed that preschoolers preferred a familiar toy over a novel one only when that familiar toy had an ambiguous function that they could explore. Learning experiences that incorporate the iterative process of making, recognizing, and resolving errors have been associated with greater learning and understanding (Metcalfe, 2017; Pan et al., 2020).

Lastly, positive and *joyful* environments promote children's learning (e.g., Christopher & Farran, 2020; O'Connor, 2010; Pianta et al., 2008). Teachers' use of positive emotional techniques to engage children in learning supports students' gains in math and literacy across elementary school (Pianta et al., 2008). Although the benefit of joyful learning is shown through associations between positive emotional states and cognitive performance across the lifespan (e.g., Diamond & Ling, 2016; Fredrickson, 2013), recent research by Jirout et al. (2023) is particularly relevant to the current study, as it finds a significant, positive association between students' enjoyment of pre school and their general knowledge in kindergarten.

Collectively, Hirsh-Pasek et al. (2020, 2022), Nesbitt et al. (2023), Yannier et al. (2021), and Zosh et al. (2018, 2022) indicate that these instructional features are pillars of active playful learning, which describes how children can "learn through play, with or without adult facilitation, and with varying levels of structure" (Nesbitt et al., 2023, p. 3). For example, Zosh et al. (2022) indicate that children's independent free play and their participation in an organized game are classified as playful learning. When a clear learning goal is combined with student agency, a type of active playful learning called *guided play*, is born (e.g., Weisberg et al., 2016).

Benefits of Guided Play

A growing body of research highlights the importance of guided play (see Alfieri et al., 2011; Skene et al., 2022 for meta-analyses), the primary pedagogical approach through which active playful learning is implemented. Guided play preserves the student agency of unrestricted, child-led free play, but adults scaffold the play scenario by posing questions or comments in response to the student, and/or setting up the play environment, so the student achieves a learning goal (Weisberg et al., 2013, 2016). The benefits of guided play apply to early math (K. R. Fisher et al., 2013; Skene et al., 2022) and literacy (Alfieri et al., 2011; Han et al., 2010; Toub et al., 2018), and even executive functioning skills (Schmitt et al., 2018; Skene et al., 2022).

Supporting Dynamic and Comprehensive Skills

Supporting children's learning experiences requires identifying the skills children need to be successful in school and life. This includes both *constrained* procedural knowledge that can be directly taught and mastered (e.g., letter-sound correspondence, writing of letters and sight words, counting, arithmetic) and *unconstrained* skills (e.g., reading comprehension, algebraic thinking) that continuously develop over the lifespan (McCormick et al., 2021; Paris, 2005; Rittle-Johnson et al., 2015; Snow & Matthews, 2016). Both skill categories are important. Active playful learning through guided play can support the learning of constrained skills, but uniquely incorporates simultaneous instruction on unconstrained skills (Hirsh-Pasek et al., 2022).

Golinkoff and Hirsh-Pasek (2016) propose a suite of six evidence-based, measurable, and malleable skills – the *6 Cs* - as a systemic way to foster strong learning across a breadth of outcomes, which include, but extend beyond, content mastery. Namely, children must learn to *collaborate* with others and engage in social relationships that form a foundation for learning. *Communication* is born from collaboration and begets the ability to learn *content* that includes reading and math, but also learning to learn skills. *Critical thinking* involves careful examination of content as students sort through information to find the best evidence or solution to a problem. Likewise, *creative innovation* allows

students to generate new ideas by putting information together in new ways. Finally, *confidence* supports students who take reasonable intellectual risks, who have a growth mind-set, and who persist even after a failed attempt (also see Hirsh-Pasek et al., 2020, 2022).

Supporting Teachers' Professional Learning

The approach adopted in this study supports teachers' planning and implementation of guided play as a mechanism to promote active playful learning. This study is based on the extant science of learning literature, as well as on a large literature addressing best practices for teacher professional development. Teachers typically expect that continued professional development will prepare them to meet changing expectations and promote effective and equitable learning communities for students from a wide array of backgrounds (Cobb et al., 2018). While there is agreement as to the need for in-service learning and its potential benefits, there is much variability in the quality of the opportunities provided, and in turn, variability in how professional development improves teachers' instructional practices and supports students' learning and development (e.g., Darling-Hammond et al., 2017; Glazerman et al., 2010).

This study focused on five critical features from the literature on teacher professional development to support the intervention design and promote guided play in the classroom. Systematic reviews and meta-analyses highlight the need for effective professional development to offer: 1) intense and sustained training over weeks and months, 2) coherent connections to teachers' practices, 3) embedded supports provided in teachers' work environments that allow for active, hands-on learning, 4) a deep focus on specific discrete skills and content aligned with *how* students learn, and 5) collective participation among a community of teachers that allows for peer learning (Darling-Hammond et al., 2009, 2017; Desimone, 2009; Garet et al., 2001; Hill et al., 2013; Lynch et al., 2019; Zaslow et al., 2010). These features coalesce in *classroom embedded coaching*, which has been widely endorsed as a method of impactful professional development (Kraft et al., 2018), especially compared to stand-alone workshops and trainings (e.g., see Blazar & Kraft, 2015 for a review).

Often referred to as *practice-based coaching* (e.g., National Professional Development Center on Inclusion, 2008; Shannon et al., 2021; Snyder et al., 2018), or as *instructional coaching* (e.g., Kraft et al., 2018), the practice involves the coach, or a mentor teacher, conducting observations of the participating teachers' practices and then providing individualized feedback and resources to help them improve. Coaching is based on the premise that teachers hone their practices through daily interactions with colleagues, students, and families and that professional development connected to the environments in which teachers teach will yield lasting change. Namely, the coach and teacher cycle through three steps: 1) goal setting, including identification of steps needed to meet goals; 2) focused observations of teachers' practices aligned with identified goals; and 3) coach feedback and modeling to refine teachers' practices, coupled with joint reflection between the coaches and teachers (National Professional Development Center on Inclusion, 2008, Neufeld & Roper, 2002).

Evaluation of coaching interventions indicates potential benefits for teachers' instructional practices and student achievement (e.g., Dunst et al., 2015; Kraft et al., 2018). A meta-analysis of coaching effects (Kraft et al., 2018) estimated an effect size of 0.49 standard deviations (SD) for teachers' instructional practices and 0.18 SD for student achievement. Hill et al. (2015), for comparison, estimated the difference in instructional quality between novice and veteran teachers between 0.2 and 0.4 SDs, demonstrating the instructional benefits of coaching.

Current Study

The current study evaluates teachers' perceptions of a 6-month intervention designed to enhance teachers' capacity to design and implement guided play experiences in their classrooms. Using guided play, the objective was to increase opportunities for student agency in pursuit of clearly articulated learning goals. Embedded coaching is directly connected to teachers' practices and needs. Teachers

maintained professional discretion to develop activities that simultaneously aligned with their curricular learning objectives, the pillars of active playful learning, and their students' backgrounds and experiences inside and outside the classroom. Key coaching characteristics included: Individualization (coaching co-designed with teachers), intensity and context-specificity (classroom visits every 3 weeks), a sustained duration (6-month duration), and a focus on specific practices. Coaching was supplemented with two full-day content workshops.

To examine the feasibility and acceptability of the guided play intervention on teacher participants, an exploratory mixed-methods approach was employed to address 4 questions: (1) What were teachers' perceptions of the teacher-coach relationship and the support received, including positive and negative aspects of the embedded coaching classroom visits (engagement, observations, and modeling) and supplemental supports (workshops, facilitated professional collaboration, administrative support)? (2) Were teachers' opinions of play-based learning different after they participated in the intervention? (3) What were teachers' perceptions of the impact of the intervention on classroom climate and students' learning experiences? And (4) What were teachers' perceptions of the impact of the intervention on their students' *6 Cs* skills (collaboration, communication, content, critical thinking, creative innovation, and confidence)?

Methods

Participants

Thirty kindergarten classrooms (one classroom co-led by two teachers and all others led by a single teacher) from across New Hampshire began the intervention program in Fall 2019. During the previous school year, presentations summarizing the play-based learning legislation were given to teachers throughout the state, in partnership with the New Hampshire Department of Education. Teachers were recruited through these presentations and priority was given to higher-need school districts based on the percentage of students who received free and reduced-price lunch. On average, 33.3% ($SD = 13.2\%$) of students in participating districts were eligible for free-reduced price lunch and 2.8% ($SD = 3.4\%$) of students identified as English Language Learners. Consistent with the demographics of New Hampshire, students served by study districts were 85.3% ($SD = 9.9\%$) White, 2.9% ($SD = 3.2\%$) Black, and 5.2% ($SD = 5.7\%$) Hispanic. Teachers were experienced educators with an average of 18 years of overall teaching experience and 10 years of experience teaching kindergarten. Additionally, 59% held a master's degree. All the teachers were White women.

Guided Play Intervention

Coach Background

Two full-time coaches delivered the embedded coaching and content. Coaches were employed by the research team and did not engage in supervision of the 15 teachers to which each was assigned. The coaches held master's degrees in education and met practice-based coaching qualifications and competency standards set by the New Hampshire's Departments of Health and Human Services and Education. Minimum qualifications for the practice-based coaches included: 1) a bachelor's degree in education, special education, social work, human/child development, or a related field and 2) 5 years of experience in an area of education/expertise. Competencies included coaches' professional demonstration of 1) ethical standards, 2) communication skills, 3) evidence-based coaching skills, and 4) commitment to ongoing professional development.

Intervention Approach

The coaching intervention aimed to enhance teachers' capacities to design and implement active playful learning experiences (i.e., guided play experiences) for their students. Before coaching, all teachers attended a full-day, interactive workshop in August 2019 to lay the foundation for practices

that would be supported and extended through embedded coaching. Initial classroom visits in September 2019 sought to establish a collaborative partnership between the coach and teacher including 1) discussion of a teacher's identified areas of strength, areas for growth, and goals for their coaching experience, 2) review of the cyclical coaching process of observation, reflection and feedback, goal setting, and action planning, 3) setting of SMART (Specific, Measurable, Achievable, Relevant, and Time-Bound) goals, and 4) creation of an action plan with specific observable steps and supports needed to achieve identified goals.

Follow-up classroom coaching visits occurred every 3 weeks until late February or early March 2020. Each visit included an hour of focused observation by the coach followed by a 45-minute debriefing session between the coach and teacher.

The focus of each observation was established by the teacher and coach at their previous meeting. An observation period may have included several activities: 1) observation of the student and/or teacher interactions, 2) modeling of identified teaching strategies (e.g., use of open-ended questioning, observation and documentation of students' learning), 3) implementing guided play activities for students, 3) documenting student learning or teacher practices, and/or 4) offering side-by-side coaching with quick suggestions or verbal prompts.

Debriefing meetings followed the observations. The coaches shared feedback and facilitated the teachers' reflection on the activities they observed. Each debriefing meeting concluded with goal-setting and establishing action steps for the teacher to implement. Teachers and their coaches engaged in a collaborative dialogue during debriefing meetings and addressed both areas of success and challenges. These conversations directly informed the establishment and revision of teachers' goals regarding guided play implementation with sensitivity to individual teachers' experiences. Documentation of each coaching visit was completed using a coaching log, which was shared with the teachers and included four components: 1) the running record of behaviors observed during the hour-long observation, 2) reflections made by the coach and teacher regarding the behaviors observed, 3) identification of specific behaviors or strategies to be reinforced and constructive feedback for how to refine behaviors or strategies, and 4) action steps for the coach and teacher to complete.

A second in-person, all-day workshop was held in February 2020, halfway through the coaching process. It reinforced and extended content about how to effectively support guided play for all participating teachers and demonstrated how a teacher's particular curricular goals and requirements could be taught through that instructional method. The workshop highlighted the use of interdisciplinary thematic learning and offered an overview of how guided play promotes the full breadth of *6 Cs* skills.

Intervention Content

The intervention helped teachers embed up to 75 minutes of guided play into their daily schedule, allocating time to provide 1) an overview of learning goals to students typically in a whole-group format (about 10 minutes in duration), 2) student-led guided play typically implemented as small groups (50 minutes) and 3) opportunities for student reflection and sharing out, which were typically implemented in whole-group (15 minutes).

The intervention was tailored to meet the individual needs of teachers and their classrooms, while still prioritizing increased guided play. The intervention content focused on defining guided play (teacher-initiated, student-led instruction). Further, teachers were taught about the pillars of guided play (active, engaging, meaningful, socially interactive, iterative, and joyful learning), including how to identify the degree to which those features appeared in their lessons and how to revise and create activities that better incorporated those features. Within this approach, the intervention aimed to help teachers: (1) Intentionally plan lessons that utilize guided play to support their classroom content/ curricular goals; (2) create and maintain environments that reflect the pillars of active playful learning; (3) facilitate and guide students engaged in guided play; (4) engage in responsive dialogue with students, including the use of open-ended questioning; (5) leverage information gathered through

observations to inform planning; and (6) make learning visible, including encouraging students to document and reflect upon their learning.

Data Sources

Quantitative Data Sources

Quantitative data to evaluate teachers' views on the quality of the coaching experience, understanding and implementation of play-based learning, and reports of impacts on student outcomes are drawn from three teacher surveys (pre-intervention in September 2019, mid-year in January 2020, and post-intervention in May 2020). These teacher-reported instruments are essential for understanding the degree to which coaching on guided play is translated into practice and influencing teachers' professional satisfaction in the classroom.

Teacher Perceptions. Researchers developed three play-based learning (for all measures the term used to align with the New Hampshire legislation on play-based kindergarten) items on a Likert scale (higher scores indicate more positive perceptions) and asked teachers before and after the intervention: 1) Please rate your comfort level with implementing play-based learning in your kindergarten classroom with a 5-point scale from very uncomfortable to very comfortable, 2) How practical would you consider the implementation of play-based kindergarten in your classroom to be? with a 5-point scale from very impractical to very practical, and 3) In your opinion, how important are play-based opportunities to your students' success? with a 4-point scale from not important to very important. Teachers also indicated if they thought they had a play-based classroom (yes, no, or not sure responses). The items were developed for this study to discretely capture teachers' views on play-based learning.

6 Cs Scale. The *6 Cs Scale* was a 16-item scale to measure teacher reports of students' collaboration, communication, content, critical thinking, creative innovation, and confidence (Appendix A). Developed for this study, teachers indicated how much they agreed with a prompt on a 5-point Likert scale with higher scores indicating greater student skill levels. Administered post-intervention, teachers retrospectively reported on their overall students' skills before the intervention as well after their participation in the intervention. Estimates of internal consistency indicated alignment between items both for retrospective reports pre-intervention (Cronbach's $\alpha = .93$) and post-intervention ($\alpha = .89$).

Coaching Perceptions. Upon the completion of the coaching sessions at mid-year, teachers rated their coach's level of involvement, responsiveness, and connection on a 4-point Likert scale (higher scores indicate more favorable perceptions). Teachers also rated their knowledge of play-based learning before and after coaching, their perceived benefit of the intervention, and whether they would recommend the experience (yes or no). The items were developed for this study to discretely capture teachers' views.

Qualitative Data Sources

Two sources of data for the qualitative analysis were the end-of-the-year survey in May 2020 and the closure meeting logs filled out by the coaches as they conducted virtual, year-end meetings with their teachers in May 2020. In total, there were 58 documents from 30 teachers included. Teachers' responses to the open-ended questions included in the end-of-the-year survey ($n = 28$) and coaches' closure meeting logs ($n = 30$) were analyzed. During the closure meeting, teachers were asked for their feedback in five areas: (1) How their work with their coach impacted their classroom practice; (2) Specific aspects of the coaching that worked well; (3) Recommended changes for future coaching partnerships; (4) The impacts of play-based coaching and practice on children's learning; and (5) Any plans to implement what they worked on during the coaching program in their classroom, school, team, or district in the future.

Open-ended survey questions are available upon request. Importantly, knowing what teachers perceived as working or not working, impactful or not, will not only support the evaluation of this pedagogical approach but feed into the refinement of efforts to support active playful learning in schools.

Analytic Approach

Quantitative Approach

The quantitative analysis focused on the interpretation of descriptive statistics and examining the difference between teacher reports of their perceptions of play-based learning from pre-coaching to post-coaching using paired sample t-tests and reporting of mean difference effect sizes. Similarly, paired sample t-tests were used to estimate the difference in teachers' retrospective accounts of children's *6 Cs* skills. Quantitative results focus solely on changes in rating from pre- to post-coaching; they are not a test of intervention impacts compared to a control group.

Qualitative Approach

Qualitative analysis followed an iterative process based on qualitative content analysis procedures described by Zhang and Wildemuth (2009) to promote an in-depth understanding of the data, coding consistency, and credibility of inferences. Three coders worked on the analysis process. One coder, who has a Ph.D. in Education and experience with qualitative data analysis, trained the other two coders and guided them through the analysis process. Initially, each coder coded three closure meeting logs individually using the inductive coding model, where patterns and codes emerged from the data (Lincoln & Guba, 1985). The coders engaged in a collaborative coding process and applied the constant comparative method as they individually analyzed each document, then met to address concerns regarding codes and to assess intercoder agreement (Creswell & Miller, 2000; Zhang & Wildemuth, 2009) and to increase reliability through investigator triangulation (Patton, 2002). Categories and themes for both closure meeting logs and survey responses were revised several times and this iterative coding process was repeated until the coders agreed that no further revisions were needed. This iterative process enabled the coders to achieve consensus and 100% reliability with each other through their deliberation. After the closure meeting logs were completed, coders analyzed the responses to the open-ended survey questions. While the codes and coding schemes remained separate for closure meeting logs and survey responses, similarities emerged.

Results

Intervention Supports

Our quantitative and qualitative data indicated teachers' positive responses to the embedded coaching model. By January 2020, teachers reported on a mid-year survey that their coaches were highly involved (92% of respondents), highly responsive (96%), and highly connected (100%). Teachers already identified a very significant benefit (88%) from working with their coach. Respondents uniformly stated that they would recommend the experience to a colleague.

Despite teachers' positive experiences with their coaches, perceived administrative support was slightly limited with an average rating between supportive and very supportive between pre-coaching ($M = 3.48$, $SD = 0.65$) and post-coaching ($M = 3.44$, $SD = 0.71$). The average rating did not significantly change over the school year ($t(24) = -0.30$, $p = .77$, Hedges' g $(g) = -0.06$ SD).

A detailed description of qualitative response frequencies by theme, subcategory, and data source is provided in Appendix B. One theme that emerged from qualitative analysis of teachers' open-ended responses on the post-coaching survey and the coaches' notes from their year-end closure meetings with their teachers was the *Outcomes of Coaching for Teachers*. This included the sub-category *Positives of Coaching*, which described teachers' positive experiences directly related to their

engagement with their coach. Here, 83% of teachers noted, in 52 instances, that coaching was a valuable professional learning experience. One teacher commented, "This has been the most positive learning experience I have had in all my years of teaching. The coach/mentee model has helped me grow so much." Teachers also benefitted from coach feedback, which was mentioned by 67% of teachers in 26 instances. For example, one teacher remarked how feedback "support[−ed] [her] in expanding ideas." Teachers also noted the value of the coaches' observations (reported by 47% of teachers in 18 instances), coach engagement (reported by 43% of teachers in 13 instances), and coach modeling of play-based learning (reported by 30% of teachers in 9 instances).

Despite these positive experiences, the subcategory of *Challenges* emerged under the theme *Other Perceptions of the Coaching Program*. Aligning play-based learning with existing standards and curricula was the greatest challenge, mentioned by 50% of teachers across 32 instances. One teacher stated directly, "I think the greatest challenge in implementing a play-based curriculum is the other curriculum demands." Another explained that "the curriculum standards and 'programs' [she was] expected to use" were barriers to play-based learning.

Some teachers made suggestions for improving the coaching program. The most common suggestion (with 11 references made by 37% of teachers) was that coaches make additional visits.

Knowledge and Views of Play-Based Learning

Our mixed-methods results likewise showed how teachers developed greater knowledge of play-based learning and adopted more favorable opinions toward it. The mid-year survey revealed that teachers retrospectively reported a significant increase ($t(24) = 8.05$, $p < .001$, $g = 1.56$ SD) in their knowledge of play-based learning, and ability to engage students in it, from before they participated in the coaching program ($M = 2.00$, $SD = .65$) to January 2020 ($M = 2.92$, $SD = .28$). Across the 2019–20 school year, teachers exhibited significant pre- to post-coaching increases in their recognition of play-based learning as important ($t(25) = 2.81$, $p = .01$, $g = 0.53$ SD), practical ($t(25) = 3.64$, $p = .001$, $g = 0.69$ SD), and comfortable ($t(24) = 2.10$, $p = .046$, $g = 0.41$ SD). See Table 1 for descriptive statistics on teachers' opinions regarding the importance, practicality, and comfort of play-based learning from pre- to post-coaching.

Table 1. Teacher-reported outcomes of coaching on views of play-based learning and student outcomes from pre- to post-coaching.

	Pre-Coaching Mean (SD)	Post-Coaching Mean (SD)	Hedges' g Effect Size [95% Confidence Interval]
Play-Based Learning Perspectives			
Comfort with Implementing Play-Based Learning (range 1 to 5)	3.40 (1.04)	4.04 (1.27)	0.41 [0.01, 0.80]†
Practicality of Implementing Play-Based Learning (range 1 to 5)	3.77 (0.91)	4.46 (0.58)	0.69 [0.27, 1.11]**
Importance of Play-Based Learning (range 1 to 4)	3.62 (0.57)	3.96 (0.20)	0.53 [0.13, 0.93]*
Student Outcomes (range 1 to 5)			
Collaboration: Effectiveness working with others	3.15 (1.05)	4.50 (0.58)	1.40 [0.85, 1.92]**
Collaboration: Enjoyment working with others	4.08 (0.48)	4.88 (0.33)	1.38 [0.84, 1.91]**
Communication: Written Skills	2.77 (0.91)	4.04 (0.72)	1.23 [0.72, 1.73]**
Communication: Verbal Skills	3.15 (1.01)	4.65 (0.49)	1.47 [0.91, 2.01]**
Content: Enjoyment with content learned	3.85 (0.68)	4.54 (0.51)	0.80 [0.36, 1.23]**
Content: Importance and connection to content	3.46 (0.86)	4.54 (0.58)	1.03 [0.55, 1.49]**
Content: Understanding of Literacy content	3.81 (0.75)	4.42 (0.50)	0.79 [0.36, 1.22]**
Content: Understanding of Math content	3.73 (0.92)	4.46 (0.58)	0.86 [0.41, 1.29]**
Content: Understanding of Science content	3.46 (0.91)	4.31 (0.62)	0.93 [0.47, 1.38]**
Content: Understanding of Social Studies content	3.52 (0.82)	4.24 (0.66)	0.88 [0.42, 1.33]**
Critical Thinking: Effectiveness of thinking	2.65 (1.29)	4.54 (0.51)	1.55 [0.98, 2.11]**
Critical Thinking: Comfort with questioning information	3.19 (1.20)	4.65 (0.49)	1.28 [0.76, 1.79]**
Creative Innovation: Generate and apply new ideas	3.15 (0.97)	4.77 (0.43)	1.66 [1.07, 2.25]**
Creative Innovations: Find different solutions	3.19 (1.06)	4.58 (0.64)	1.27 [0.75, 1.77]**
Confidence: Attempt to fix issues	3.08 (1.13)	4.50 (0.65)	1.34 [0.81, 1.86]**
Confidence: Perseverance during difficulties	3.12 (0.99)	4.54 (0.65)	1.46 [0.90, 2.00]**

Paired sample t-test used to estimate significance.
**$p < .01$, *$p < .05$, †p < .10.

Qualitative analysis of teachers' open-ended responses on the post-coaching survey and the coaches' year-end closure meeting notes yielded the theme of *Outcomes of Coaching for Teachers*, which included the subcategory *Impact on Teaching Practices*. Within this subcategory, all 30 teachers attributed positive changes in their teaching philosophy to their coaching experience. Across 77 instances, teachers described how they changed their instruction to promote play-based learning and adopted new perspectives on their role in the classroom. For example, a teacher described how coaching helped her "let go of control a little bit, slow down and give time for children to wonder and dive more deeply into the experiences … " Another recognized the holistic nature of play-based learning, noting how she could "focus on the total experience of learning, rather than just on content, allow children to take the reins/be in charge of experiences and learning, and guide children along the way to more purposeful experiences." A deeper understanding of play-based learning was also reflected in how 73% of teachers reported across 33 instances that they could effectively integrate content into play-based learning. For example, one teacher explained on their post-coaching survey that they had " … choice time with play-based activities centered around math and writing. The activities were open-ended in that they can fit the student's interests and ideas."

Beyond applying play-based learning in their classrooms, teachers became advocates for the approach, as reflected in the subcategory *Impact on Teachers' Future Plans*. Here, 83% of teachers remarked across 33 instances that they were eager to collaborate on play-based learning with other teachers. Additionally, 67% of teachers expressed an interest in disseminating playful learning across 24 instances. For example, one teacher described plans to collaborate with district administration to scale up play-based learning. This investment in play-based learning may have been supported by the teachers' increased joy, which was referenced by 63% of teachers across 24 instances under the *Impact on Teaching Practices* subcategory.

Classroom Climate and Students' Learning Experiences

The classroom climate changed during the intervention as teachers implemented play-based learning and facilitated the student behaviors associated with it. A significantly greater percentage of teachers identified their classroom as play-based ($t(26) = 5.29$, $p < .001$, $g = 0.99$ SD) from pre- (37.9%) to post-coaching (89.3%).

The qualitative analysis yielded the theme *Outcomes of Coaching for Students*, which includes subcategories describing many ways in which students' educational experiences changed with the intervention. All teachers referenced increased student agency across 73 instances. One teacher commented in her survey, "I enjoyed implementing dramatic play and play-based learning into my classroom, seeing the excitement and ownership children felt about their learning through play." This theme also included subcategories that were consistent with the playful learning principles outlined by Hirsh-Pasek et al. (2020, 2022) and Zosh et al. (2018, 2022), such as increased active learning (reported by 93% of teachers across 63 instances), increased engagement (reported by 93% of teachers across 44 instances), increased socio-emotional learning and social interaction (reported by 80% of teachers in 93 instances), and increased student joy (reported by 93% of teachers in 31 instances).

These changes in the classroom climate were referenced indirectly by teachers, as well. Under the *Outcomes of Coaching for Teachers* theme, the changes in philosophy reported by all teachers across 77 instances likewise influenced students. One teacher's survey stated:

> I have absolutely LOVED [emphasis in original] my immersement [sic] in the PBL Kindergarten Cohort. I feel I could embrace the core of my educational philosophy of the whole child and developmental[-ly] appropriate practices, with permission and encouragement from my building administration. I grew so much in letting students make choices in their learning and relinquishing my need to control and give them more of a sense of ownership.

A related subcategory under the same theme was *Increased Intentionality*, described by 57% of teachers in 39 instances, which refers to purposefully planning play-based learning. For example, during her closure meeting, one teacher described "being more intentional in [her] practice, what she makes available to children, and how she invites them into play experiences."

Student 6 Cs Skills

Our quantitative and qualitative results offer preliminary evidence demonstrating the positive associations between the coaching intervention and students' *6 Cs* skills. Teachers retrospectively reported significant increases in students' collaboration, communication, content engagement and mastery, critical thinking, creative innovation, and confidence (Table 1). Effect sizes ranged from $g = 0.79$ to 1.66 standard deviations. Overall, average *6 Cs* ratings were significantly different ($t(24) = 10.30$, $p < .001$, $g = 1.99$ SD) from pre-coaching ($M = 3.29$, $SD = 0.65$) to post-coaching ($M = 4.51$, $SD = 0.35$).

Qualitative analysis of teachers' post-coaching survey responses and closure meeting notes likewise provides early evidence of students' *6 Cs* skills advancing through this active playful learning intervention. Under the *Outcomes of Coaching for Students* theme, all teachers described how students exhibited increased collaboration across 78 instances. One teacher stated in her survey, "I have seen so much more collaboration and help between the students." Another explained how collaboration extended beyond conventional academic content, noting how students " . . . work together to solve conflicts instead of immediately asking for help." All teachers also explained how their students showed increased critical thinking across 68 instances. As a teacher stated in her survey, "[play-based learning] helps them [students] to become deeper thinkers and learners. They apply the skills being taught at a higher level." While collaboration and critical thinking were the most commonly referenced skills, communication (reported by 80% of teachers in 57 instances) and confidence (reported by 80% of teachers in 32 instances) also increased.

Discussion

This study provides insights into the initial feasibility and acceptance of a 6-month pedagogical intervention that was implemented with teachers in response to a state-wide mandate requiring play-based learning in kindergarten. The active playful learning approach used embedded instructional coaching, conducted in partnership with participating teachers, focused on guided play – a form of play-based learning that balances student agency with the pursuit of teacher-initiated learning goals (e.g., Weisberg et al., 2013). The results are centered around teacher's perceptions of change in their own classroom practices and in student outcomes. Changing teacher mind-sets around learning, and particularly the relation between guided play and learning, is essential if the policy developed in New Hampshire, and similar laws enacted in Oklahoma and Connecticut (Bornfreund, 2023), are to impact classroom practice.

Overall, results suggest that teachers reacted positively to both the instructional coaching experience and the content focus on active playful learning as implemented through guided play. Nearly all teachers provided positive ratings of their coaches and found the collaboration beneficial. Teachers also viewed themselves as more effective facilitators of play-based learning with greater knowledge of, and more positive opinions about, the approach. Teacher reports further provided preliminary support that the implementation of guided play strategies can positively affect classroom climate and support comprehensive unconstrained skills that children need to be successful in school and life (e.g., McCormick et al., 2021). Taken together, this study indicates the viability of a coach-supported intervention aimed at helping teachers incorporate guided play over an extended part of their school day. Beyond the feasibility of the approach, this study demonstrates the methodological value of using mixed methods to evaluate an educational intervention. The inclusion of qualitative

data enables detailed, first-hand reporting of teachers' experiences with the coaching process and active playful learning, as well as their students' classroom behaviors and gains in the *6 Cs*.

The findings align with existing research demonstrating the positive effects of guided play, or active playful learning, on children's learning when contrasted with direct instruction (see Skene et al., 2022 for a meta-analysis of effects). Benefits have been found for early literacy (Cavanaugh et al., 2017) and math (Bleses et al., 2020; Bustamante et al., 2022; Eason & Ramani, 2020; K. R. Fisher et al., 2013) skills, vocabulary (Borriello & Liben, 2018; Han et al., 2010; Toub et al., 2018), creativity (Evans et al., 2021), and behavioral self-regulation (Schmitt et al., 2018).

Although views of the intervention were predominately positive, the teachers' results indicated areas for refinement. One key challenge was how to marry active playful learning with existing standards and curricula. While the intervention was designed to be integrated into the existing curriculum used by teachers, including providing individualized support for integration, the tension between schools' existing standards and curricula and active playful learning was apparent. For example, to allow children to actively engage in their learning, some teachers set the goal to increase small group and center groupings which became difficult when their districts' literacy curriculum expected two blocks of 45 minutes of whole-group instruction. Another limitation identified was the need for greater administrative support to ensure common expectations between teachers and their principals and access to resources needed for guided play. As the study is designed for quality improvement and providing teachers a voice in the refinement of the intervention (c.f., rather than as a single-pass sequential cycle where a problem is outlined, and then an intervention is developed, implemented, and evaluated), the intervention is being expanded to ensure that these critical elements are addressed in a manner that provides teachers and district administration ownership in how best to adapt guided play to their school. These findings highlight the critical need for developers of school interventions to be connected to the ecology of the classrooms where the intervention will be implemented (Doyle & Ponder, 1975) and work closely with teachers and districts as valued partners.

Another takeaway from the study was the value of the intervention's delivery of classroom-embedded coaching. The choice to provide teachers with sustained personalized coaching over 6-months was deliberately based on prior evidence that these are critical features of effective professional development (e.g., Darling-Hammond et al., 2009, 2017; Desimone, 2009; Hill et al., 2013; Zaslow et al., 2010). Coaching, however, can be labor-intensive, costly, and potentially cost-prohibitive for school districts. Teachers dedicate substantial time to trainings and professional development and the cost to school districts is substantial, with teachers participating in approximately 19 school days of professional development per year accounting for approximately 4% of districts' budgets (The New Teacher Project, 2015). However, teacher responses indicate that they thought highly of the coaching in this intervention. This positive response may explain the growing popularity of coaching in the primary grades (kindergarten through grade 6) in the United States, despite potentially challenging resource requirements. As of 2016, approximately 41% of public schools report having academic coaches to support reading, 27% to support mathematics, and 37% to support general instruction (U.S. Department of Education, 2016). Investment in professional learning needs to be adequately evaluated to ensure that training programs are of quality, including whether an investment in high-quality coaching generates the intended impacts on teachers and students.

The intervention also elicited more joyful teaching in the classroom, as teachers appreciated both the coaching they received and the benefits of guided play. In a climate where teachers often feel stressed and are leaving jobs in early education (e.g., Bryant et al., 2023; Souto-Manning & Melvin, 2022; Swigonski et al., 2021), this finding is one that deserves greater consideration. If teachers are happier teaching, they are less likely to leave the profession.

Lastly, the results of this project highlight the importance of research-practice partnerships and design-based implementation research. The guided play intervention was developed to meet a unique need of New Hampshire's teachers based on a legislative mandate. The partnership between the state and university partners was based on a shared commitment to developing collaborative, long-term relationships to address the identified need. There was no assumption that university partners had the

solution. Rather state partners and educators were brought into the development and evaluation of the intervention. Specifically, a design-based implementation approach was used for the "development and testing of innovations that foster alignment and coordination of supports for improving what takes place in classrooms" (Penuel et al., 2011, p. 331). At a practical level, teachers collaborated with their coaches to identify and pursue individual goals related to the implementation of guided play across the intervention. While we are not able to conclude if this co-development process was associated with teachers' acceptance of the intervention, quantitative and qualitative data suggest the potential importance of teacher agency in effective intervention development and implementation.

The study presented here summarizes a first step in the larger partnership and intervention development, which includes engaging an iterative cycle of data collection, feedback, planning, implementation, and monitoring associated with continuous quality improvement and design-based research (Derrick-Mills, 2015). It is the aspiration of research-practice partnerships – and the current work – that through co-design, the intervention and research process will be more aligned with the needs of educators and more likely to be sustainably implemented.

Future Directions

The current study was developed in response to an identified practical need from schools in New Hampshire with relevance to other state-level (Bornfreund, 2023) and even international efforts (e.g., Ministry of Human Resource Development, Government of India, 2020; Lee et al., 2023) to promote more joyful, playful learning. This investigation into this initial intervention was designed to identify strategies to improve how teachers received and responded to the intervention. Thus, the study focused on teachers who received the active playful learning intervention and was limited to outcomes reported on by teachers. The reliance on the unilateral reports by teachers is a study limitation and future work needs to include third-party ratings, observations (see Blinkoff et al., 2024), and direct assessments to determine changes in teachers' instructional practices and children's learning. Such a comprehensive approach would allow for the evaluation of training effects on teachers and students from multiple perspectives. In addition, while the pre-post intervention design provides initial evidence as to the feasibility and acceptance of the coaching program, these results cannot speak to the efficacy of the program relative to business-as-usual practice or another active coaching model. Additionally, a few measures of teachers' and students' experiences during the intervention were only reported retrospectively. An ongoing study is currently applying a pre-post design to rigorously evaluate changes in teachers' and students' experiences throughout the intervention for all outcomes and capturing perspectives on the intervention from multiple stakeholders, including teachers, students, coaches, and administrators. Furthermore, a randomized control trial of the intervention is necessary to test the causal efficacy of the intervention. Such a study needs to not only include teacher-report assessments, but more extensive measures of children's outcomes as aligned with the intervention's theory of change, including school administrative outcomes, such as absences, retention rates, grades, and test scores. Observations of classroom practices and behaviors are also needed to better understand how the intervention is impacting the learning experiences of children and teachers. These studies may be designed and evaluated against the components of a newly developed three-part equation, which describes the components of active playful learning as a combination of understanding students' lived experiences, the instructional pillars of active playful learning, and the *6 Cs* skills (Blinkoff et al., 2023; Nesbitt et al., 2023), to ultimately advance deeper learning and more joyful teaching in classrooms at scale.

The motivation for the study's guided play intervention emerged from a research-practice partnership with the state's Department of Education in response to a new legislative mandate. Thus, teachers participating in the study were externally motivated by a state requirement and internally motivated to provide developmentally appropriate, active playful learning experiences to their kindergartners. This context limits the potential generalizability of the findings. It is unclear if the perceptions and findings presented in this initial demonstration study would transfer if the legislative requirement and the choice to participate in the intervention (i.e., if participation was required) were not present. Future

work is needed to evaluate if the initial promise of the intervention extends to novel communities, populations, and countries that may differ in educational expectations for young children.

Research suggests that a more comprehensive and inclusive approach to a research-practice partnership should be explored in future iterations of this intervention and other interventions, as reflected in the three-part equation of active playful learning (e.g., Bermudez et al., 2023; Pesch et al., 2022). Future work should involve teachers and administrators in the design of the entire coaching program with sensitivity to local needs, moving beyond the inclusion of teachers' input during the coaching process.

Conclusion

This paper demonstrated the feasibility of a research-practice partnership that emerged in response to a change in education policy with direct implications for classroom instruction. The intervention's coaching approach and focus on guided play in response to the play-based learning mandate were respectively informed by evidence on effective professional learning and *how* and *what* students need to learn for success in school and beyond. Mixed-methods results demonstrated the feasibility of an intervention to support active playful learning in the classroom. The adoption of active playful learning as enacted through guided play suggests positive outcomes for kindergarten students and their teachers. This study represents one of the first translations of playful learning and skills-based pedagogy to classroom practice.

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Appendices

Appendix A. *6 Cs Survey Items*

Select the rating on a scale of 1 (Strongly Disagree) to 5 (Strongly Agree) that most closely aligns with your opinion of your students' skills.

(1) COLLABORATION: Overall, students worked/studied effectively with other students.
(2) COLLABORATION: Overall, students enjoyed working with other students.
(3) COMMUNICATION: Overall, students had good written communication skills.
(4) COMMUNICATION: Overall, students had good verbal communication skills. They asked questions clearly and communicated with others effectively.
(5) CONTENT: Overall, students liked the content they were learning in class.
(6) CONTENT: Overall, students felt the content was important and they felt connected to it.
(7) CONTENT: Overall, students had a good understanding of literacy content.
(8) CONTENT: Overall, students had a good understanding of math content.
(9) CONTENT: Overall, students had a good understanding of science content.
(10) CONTENT: Overall, students had a good understanding of social studies content.
(11) CRITICAL THINKING: Overall, students engaged in critical thinking effectively (e.g., analyzing, criticizing, evaluating, organizing, and comparing information).
(12) CRITICAL THINKING: Overall, students were comfortable questioning information in the class.
(13) CREATIVE INNOVATION: Overall, students were able to generate new ideas and apply them in creative ways.
(14) CREATIVE INNOVATION: Overall, students were able to find new or different solutions to one problem.
(15) CONFIDENCE: Overall, when students found something difficult, they tried to fix the issue and tried different solutions.
(16) CONFIDENCE: Overall, when students found something difficult, they persevered and still tried to learn it.

Appendix B. Qualitative Themes and Subcategories

Qualitative analysis revealed several ways in which the play-based learning (PBL) coaching experience influenced teachers and students alike. Findings were grouped under three categories: Outcomes of coaching for teachers, outcomes of coaching for students, and other perceptions of the coaching model. Detailed information about the categories and themes, as well as sample quotes, and the number of references, the source of the references, the numbers and percentages of teachers who expressed these categories and codes are available from the authors upon request. A theme may be expressed once or multiple times, in one or both sources (survey and closure meetings) by one teacher. In this section, we will present the most frequently occurring themes based on the number of references.

Outcomes of Coaching for Teachers

Impacts on Teaching Practices

Enhanced Teaching Philosophy. All 30 teachers expressed, in 77 different instances in both survey responses and closure meetings that the coaching experience positively influenced their approaches to teaching and beliefs about teaching. During the closure meeting, one teacher noted that after the coaching, that she was able to "let go of control a little bit, slow down and give time for children to wonder and dive more deeply into the experiences s/he offered."

Survey responses falling under this theme include: "After the coaching experience, reflection on my part has increased, and I've let that steer me even more in my teaching;" I learned that less is more, and using fewer items and exploring them deeply was much more effective."

Increased Intentionality. 57% of teachers commented, in 39 instances, that the coaching experience let to them being more intentional in their teaching. During the closure meeting, when asked about the impact of coaching on their teaching, teachers responded they it led them to "being more intentional in my practice (related to guided play)," what she makes available to children and how she invites them into play experiences. One teacher talked about how she started questioning her decision making, especially when planning.

Integration of Content. While discussing how the coaching experience impacted their teaching, 73% of teachers noted, in 33 instances, that they could effectively integrate content into PBL. While responding to the question regarding

how they incorporated PBL into their lessons on the survey, one teacher responded: "We had a choice time with play-based activities centered around math and writing. The activities were open ended in that they can fit the student's interests and ideas."

Other Themes.   Other themes that emerged were teachers' active promotion of student agency (25 times by 63% of teachers), increased teacher joy (24 times by 63% of teachers), and implementation of active design (22 times by 53% of teachers).

Positives of Coaching

Overall Professional Development Experience.   83% of teachers noted, in 52 instances, that the coaching experience provided them with a valuable training experience. Teacher comments on the survey included: "This has been the most positive learning experience I have had in all my years of teaching. The coach/mentee model has helped me grow so much;" "The coaching experience provided me with invaluable insight and ideas into how to make play-based kindergarten a very practical implementation;" and "I also tremendously benefitted from my play-based coaching to hone my skills and get new ideas."

Teachers also provided positive feedback regarding the coaching program and its benefits as an overall professional development experience.

Impact of Coach Feedback.   While discussing which specific aspects of the coaching program they found beneficial, 67% of teachers (26 instances) pointed out feedback from coaches, such as "feedback conversations-support me in expanding ideas; "Support in staying focused on my goals (learning or otherwise).

Other Themes.   Impact of coach observation (18 instances by 47% of teachers), positive impact of coach engagement (13 instances by 43% of teachers), and the impact of coach modeling of play-based learning (reported by 30% of teachers in 9 instances).

Impact on Teachers' Future Plans

Teacher Collaboration.   In 33 instances during closure meetings 83% of teachers noted that the coaching experience led them to want to continue and collaborate more with fellow teachers.

Implementation of Play.   During closure meetings 80% of teachers, in 25 instances, explained how they plan to implement PBL in the future. For example, one teacher, who will move to a new role teaching second grade, talked about how she will try to bring parts of what she has learned about PBL to her older students.

Dissemination of Playful Learning.   When asked about the future during closure meetings, 67% of teachers, in 24 instances, noted that they planned to share their knowledge of PBL. One teacher said she was already working with the K curriculum coordinator and assistant superintendent on writing a district-wide K policy for PBL.

Outcomes of Coaching for Students

Enhanced SEL and Social Interaction

80 percent of teachers noted, in 93 instances, that their teaching with PBL had led to increased student social interaction as well as enhanced student social and emotional learning. One sample quote from the survey was, "Students are using and learning a huge myriad of social skills (the list is so long I won't include it here). Students have natural opportunities to share their thinking and learning with others."

Increased Student Collaboration

All 30 teachers commented, in 78 instances, that after starting to teach with PBL, they observed an increase in student collaboration. A sample response to the survey question regarding benefits of PBL was: "I have seen so much more collaboration and help between the students."

Increased Student Agency

In 73 references, all 30 teachers noted that students' sense of ownership and independence as learners increased through PBL. A sample response to the question about the impact of PBL on student learning during the closure meetings was

"Autonomously integrating content into play (e.g., making menus, taking orders, etc.)". In survey responses, one teacher noted, "I enjoyed implementing dramatic play and play-based learning into my classroom, seeing the excitement and ownership children felt about their learning through play."

Increased Student Critical Thinking

All 30 teachers, in 68 instances, noted that they observed enhanced critical thinking skills in students after the implementation of PBL. A sample comment on the survey was: "Students are given opportunities to expand their academic learning with open ended questioning by the teacher and intentional materials provided by the teacher." During the closure meeting, one teacher stated that PBL provided her with a way to encourage students' development of higher order thinking skills and ability to think more deeply. She said she had been struggling for years to find ways to do this and she was surprised to see how PBL led to increased critical thinking skills.

Increased Active Learning

In 63 instances, 93% of teachers talked about how PBL increased student active learning.

On the survey, one teacher noted: "Play-based learning is a way for children to engage in active, meaningful, and developmentally appropriate experiences that builds knowledge, a strong sense of self, and appreciation for the community in which they are learning."

Other Themes

Other themes that emerged frequently included increased student communication (57 references by 80% of teachers), increased student engagement (44 references by 93% of teachers), increased student confidence (32 times by 80% of teachers), and increased student joy (31 times by 93% of teachers).

Other Perceptions of the Coaching Program

Challenges

Standards and Curriculum. 50% of teachers mentioned, in 32 separate instances, noted that the current standards and curriculum made it difficult for them to implement PBL. On the survey, while expressing ideas about barriers for PBL implementation, one teacher wrote, "Within my own classroom, I feel very comfortable implementing play-based time. However, there are roadblocks from my administration that puts pressure on focusing on very academic-driven teaching rather than allowing students to learn through this method."

Time. 40% of teachers noted that time proved time to be a challenge. On the survey, some teachers noted, "One of the two biggest challenges was that I wish I had more time for planning. Play based takes a lot of planning and preparation;" and "Time is a big challenge." Discussing barriers for PBL implementation, one teacher commented, "time to construct effective learning experiences, time to organize materials for ease of use."

Other. Other challenges teachers expressed were materials for PBL and content-play integration.

Suggestions

The most commonly expressed suggestion (11 times by 37% of teachers) was that coaches increase the number of their visits. After that, 20% of teachers noted that they would like more professional collaboration (referenced 6 times) and 13% desired increased administrative support (referenced 4 times).