Evaluation of Play-Based Learning Training on AmeriCorps Members' Learning Club Implementation

AmeriCorps 2018-2019 Evaluation Report

Providence Children's Museum

Prepared: Fall 2019

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Executive Summary

This report presents the findings from the process evaluation conducted by the Providence Children's Museum (PCM) on their AmeriCorps program, MuseumCorps, during the September 1, 2018 – August 30, 2019 grant period. MuseumCorps members play an invaluable role in bringing the Museum's play values into the greater Providence community. During their service, they reach over 2,000 local families through the Museum's outreach. Most pertinent to this report are their interactions with students in Learning Club, a museum-designed afterschool program within Boys and Girls Clubs in Providence and Pawtucket.

PCM focused its evaluation on the quality of members' training and implementation of the Museum's play-based learning theory. More specifically, we investigated the effectiveness of members' training to learn if it successfully prepared members to implement play-based learning strategies within their Learning Club programs, thereby improving their likelihood to affect positive child outcomes. Through pre- and post-surveys, Learning Club observations and members' lesson plans, we learned members improved in their ability to observe and communicate play-based learning. The quality of their Learning Club lesson delivery increased, and we saw a growth in their play-based facilitation strategies. We found that we need to focus more time on members' lesson plan development. Members were able to successfully reference PCM's Learning Frameworks, demonstrating their knowledge of play-based learning theory and its link to learning, but they had trouble threading these strategies throughout their lesson content.

This evaluation process has placed PCM in the pre-preliminary tier of the evidence continuum. We know members' knowledge and skill in play-based learning improved with our training. Moving forward, we will make minor changes to our training, such as focusing more on lesson plan development, to maximize its effectiveness. We will continue to formally assess our

MuseumCorps program and investigate how play-based learning directly impacts students' self-efficacy and motivation.

Introduction

The Providence Children's Museum's MuseumCorps program extends the play-based mission of the Museum out into the community, ensuring that children from the communities that we serve have access to the learning that happens at the Museum. The MuseumCorps members focus on a wide range of access points, including Museum Education, park-based outreach, and engagement with young learners in Head Start classrooms, but the largest focus of their year of service is running Learning Clubs for children in grades 2-4 in an afterschool setting at local Boys and Girls Clubs. Learning Clubs are a math intervention that uses STEAM activities and play-based learning to strengthen kids' number sense and measurement skills. In teams of 4-5, members spend 4 afternoons a week implementing these lessons to groups of 10-24 children (groups tend to average around 12-14 students) in 1.5 hour blocks of time. Children attend clubs for a minimum of 12 sessions.

The Learning Club curriculum was developed by PCM Education team staff in collaboration with our math coach, Jill Cote. The curriculum is designed to use play to have children explore math concepts through STEAM activities. Members begin the year with a full set of lessons plans where they are encouraged to notice play and math at work. As time goes on the lesson structure is scaffolded so that members are layering in additional math and play as they strengthen their experience in those areas, and eventually members have the opportunity to write and implement their own lessons. Members participate in weekly coaching with Education team staff around lesson implementation and development.

PCM inspires and celebrates learning through active play and exploration. To us, play is a freely chosen process that involves active engagement and is personally directed and intrinsically

motivated by the child. This is the foundation for all programming – including off-site programs, like Learning Club. The Museum has been investigating the power of play and its relationship to learning for over ten years. Like play, we see learning as experiential, dynamic and shaped by the child and their experiences. From our research, we know play fuels the cognitive, social, emotional and psychical development of young children (The LEGO Foundation, 2017). In addition, providing children playful opportunities in school-like settings encourages subject-related exploration that builds motivation and interest (The LEGO Foundation, 2018). The natural relationship between play and learning is the basis of our play-based approach implemented in Learning Club. Play, when guided by an adult, actively engages children in learning. Guided play is situated between direct instruction and free-play on the educational continuum (Weisberg, Hirsch-Pasek, & Golinkoff, 2013; Weisberg, Hirsch-Pasek, Golinkoff, Kittredge, & Klahr, 2016) and is what we model in our Learning Clubs. In trainings, we refer to it as "play-based learning." In this play, educators and children are co-collaborators and learning goals are flexible. Lessons highlight children's interests and promote active engagement (Fisher, Hirsh-Pasek, Newcombe, & Golinkoff, 2013). Educators scaffold support to children through questions and comments that extend their interests. This prompts deeper exploration, a sense of agency, and more active participation (The LEGO Foundation, 2017; Weisberg, Hirsch-Pasek, Golinkoff, Kittredge, & Klahr, 2016; Weisberg, Hirsch-Pasek, & Golinkoff, 2013). Knowledgeable and appropriately trained educators are essential in creating an effective playful, yet goal-directed, learning environment (Van Oers & Duijkers, 2013).

Data from the Rhode Island Department of Education shows math comprehension is low in Providence area schools. Numbers demonstrate less than half of third graders in Providence and Pawtucket are meeting state math test expectations (Rhode Island Department of Education, 2019). Yet, children can strengthen their learning abilities, outcomes and motivations through

quality afterschool support and play-based practice (UNICEF, 2018; Vandell, Reisner & Pierce, 2007; Shernoff, 2010). Learning Club provides Providence youth the opportunity to hone their math skills in guided-play afterschool sessions. MuseumCorps members are essential to this goal.

PCM recruits AmeriCorps members beginning in January of each year and continues throughout the summer, with the bulk of recruitment taking place in late spring. If needed, a second period of recruitment takes place throughout the fall, with new members joining the team in December. This cohort was recruited for the 2018-2019 year. Members come to the program from diverse backgrounds – age, language, education level – with shared interest in working with children and promoting hands-on learning throughout the greater Providence community. Members are recruited through both the national AmeriCorps web platform and through a series of local engagement strategies, including through our networks and using local posting methods such as RICOMJOBS. The PCM AmeriCorps program is committed to recruiting members from the communities we serve and has been successful in this endeavor in recent years. More recently, PCM has also made use of national college career office tools like Handshake to recruit. Applicants to the MuseumCorps program follow a multiple step process, which includes submitting an application, supplying supporting information such as resumes and essays, and completing an interview that includes teaching a lesson.

In their role, members work with Museum staff to develop and lead after-school math-focused STEAM Learning Clubs, implement creative thinking programming in Head Start classrooms, deepen the Museum's connections with the community through park outreach and family nights, and facilitate play and learning in the Museum's hands-on exhibits. MuseumCorps members are an integral and essential part of the Museum and are the center of our outreach efforts.

In addition to these program activities, PCM places considerable value on member development. AmeriCorps members take part in at least 140 hours of in-depth training throughout their service. They undergo this intensive training as part of their year of service, both to ensure they are able to implement our programs successfully but also to grow as professionals. Museum education staff (2.23 FTE) lead trainings, with support from additional Museum staff. Staff have significant experience in developing and implementing hands-on programs for children. Members also receive guidance from PCM's math consultant, Jill Cote. Jill has worked with the Museum for three years and has extensive experience as an elementary school classroom teacher. She was a founding member of a charter school, helping to develop the school's programs, and has worked with AmeriCorps members in educational settings in past roles.

At the beginning of their term, members undergo pre-service training (PST), a three week (September start members) or two week (December start members) intensive training that covers essentials about the Museum, Learning Club, Head Start, and the AmeriCorps program. After that, members participate in both weekly coaching with Education team staff and have a two-hour "brown bag" training each week, a formal training with a range of topics. Three to four of these "brown bag" sessions are developed by Jill Cote and are dedicated to math expectations and standards for children in grades 2-4. They provide members with strategies and examples of how to communicate and build on math concepts and allow members to address math-related questions and challenges they encounter in the Learning Club setting.

Members use their training in Learning Club and throughout all of their community engagement initiatives. Overall, members develop their play-based practice through interactions with over 2000 families from Providence, Pawtucket, and Central Falls.

For this evaluation, we focused on our play trainings, a six-part series that covers the play-based theories, background, tools, and strategies that make our work unique and provide the foundation for our approach (see Table 1). Trainings have been developed over time by an interdepartmental team made up of staff from the education, visitor services, exhibits and research departments. They have been revised and expanded upon as the Museum has grown in expertise. Three of the trainings (What is Play, Learning Through Play, and Adult's Role in Play) take place during pre-service training. The remaining three (The Learning Frameworks, Observation, and Facilitation) take place later in the year once members have had the opportunity to incorporate their real-world practice into their reflections and learning.

Table 1
PCM's play training concepts

What is Play?	An introduction to PCM's play theory. Members start with a play memory and build a list of shared features. Discussions and reflections are led around themes such as play as a natural and holistic learning strategy; fueled by self-direction and self-determination. Members build their understanding that play is needed for the development of children and learn of the play deficit facing today's children. In this session, MC members are also introduced to idea of play-based learning and learn its roots are based in free-play.
Learning Through Play	An in-depth session which expands on members' understanding of play. Members are led through a series of experiences to discover why play is so important—the learning that happens naturally in free play such as exposure to new ideas, skills, abilities, attitudes and processes. Members immerse themselves in a play experience and use a play-observation tool to make the learning through play more visible. Developmental capacities (social, emotional, cognitive, and physical) that are strengthened through play are reviewed. Further discussion of the AC role in engaging children and families in different types of free play in different contexts. Comparisons are made to formal vs informal learning and environments.
Adult's Role in Play	A session dedicated to the role of adults in a free-play environment. Members consider the layers of adult engagement and are prompted by staff to discuss and reflect on experiences. THE LAND: An adventure play documentary by New Day Films is presented. This documentary used widely by educators and play advocates, designers and parents as a tool to launch robust conversations about play, risk, freedom and children's culture. Members engage in deep discussion following the showing.

Learning Frameworks	This session focuses on the Museum's Learning Frameworks. It explores different types of play (child directed, child led, etc.) and introduces the link between play, learning and exploration. It clearly defines how the Museum views learning. Members consider their personal learning experiences and relate these experiences to the components related to learning (experiential, dynamic, physical, social, emotional, and cultural).
Observation	A session highlighting the importance of observing children's experiences and what can be learned from it. Members work with the Museum researcher to define observation and strategize how it can be used in practice. Members then practice their observation skills on the museum floor. Observation reflection is included at the end of session. Members consider the challenges of observation, the pros and cons and discuss actions and behaviors they witnessed. They then think about what they learned from their observations.
Facilitation Techniques	This session breaks down the Museum's three most important facilitation techniques: hands-in-pocket, open-ended questioning and observation. These techniques are important in providing children an open-ended play experience. Members hear about these strategies in-depth and are then asked to practice the techniques with each other through role play. Members then discuss challenges and benefits to each facilitation approach and how they can be used in combination.

Research Questions

Members lead Learning Club sessions three times throughout the academic year and once in the summer. Each session consists of a minimum of twelve 1.5-hour long programs. Children take pre- and post-tests to measure their math abilities. Over the course of the program, we want to see changes in children's math knowledge, skills, and attitudes. We know that proper facilitator training and implementation are crucial to these outcomes. Thus, we have focused our evaluation on the Museum's training process. Our research questions are as follows:

- To what extent are members receiving the required training to effectively implement play-based learning theory in their programs?
- To what extent is the Learning Club curriculum, which includes play-based learning, being implemented at each site with the intended program beneficiaries at the intended dosage?

- To what extent has the Learning Club experience improved children's mathematics skills/understanding?

This report is broken down into five sections; these sections contain a description of our methodologies and instruments, an in-depth account of our findings, student math outcomes, performance measure review and a conclusion. Our methodologies include subcategories listing the methods for each evaluation method that we used while our findings include subcategories highlighting each component of the evaluation and its implementation. At the end of each finding subcategory, we draw conclusions and discuss implications.

Methods

Before starting the evaluation process, we needed to identify where PCM fell on the evidence continuum. We determined our AmeriCorps program fell between the no evidence and pre-preliminary tiers using the evidence guidelines set by the Corporation for National Community Service. In the past, we have collected systematic data to inform our logic model – fueling Learning Club's need in the community. We also continuously tested our program participants in math efficiency through pre- and post-tests (this data measurement will be discussed further in the Math Outcomes subcategory in this report). However, because we have never systematically formalized data collection or our reporting, we felt this project needed to place us firmly within the pre-preliminary tier of the evidence continuum. A process evaluation was the best way to do this. We chose a process evaluation to examine our inputs into Learning Club – specifically member development. Members' knowledge and skill in play-based learning is a key component in improving students' math self-efficacy, interest and motivation in Learning Club. Before formally assessing student outcomes, we needed to learn if our training was providing our members with the tools they needed to successfully and confidently implement play-based math learning. This evaluation focused on the training and development of

15 MuseumCorps program members. The 2018-2019 cohort originally had 17 members. However, two left the program for compelling circumstances. As a result, they were not included in analysis. Data collection occurred in different capacities throughout the year. See Figure 1 for a visual timeline.

Figure 1. Timeline of data collection from members and methods used

Instruments

Pre- and Post-Surveys

Members were asked to complete a pre-training survey at the start of their service and a post-training survey at the end of their four-month training. Members who started in December received their post-survey after their intensive one-month training. Members were given ten minutes to complete the surveys. Our Spanish speaking members were given additional time, if needed and encouraged to respond in Spanish. These surveys were later translated by a Spanish-speaking member of staff. Fifteen out of seventeen members completed both the pre- and post-surveys. One member left the program prior to our post-survey distribution and the other's pre-survey was not documented. Both pre- and post-surveys focused on members' understanding of play, play-based learning and confidence levels about implementing play-based learning at Learning Club. Only the final two questions changed from the pre- to post-survey. In the pre-

survey, the questions highlighted possibilities and questions related to play-based learning while the questions in the post-survey were intended to have members reflect on the methods they learned or witnessed over time. Both pre- and post-surveys can be found in Appendix A and B at the end of this document.

Learning Club Observation

Using a set observation instrument, our Museum's AmeriCorps Associate conducted two rounds of Learning Club lesson observations for each member (n=15). PCM's Museum Researcher and an external evaluator established the observation instrument in March of 2019 with the help of the Museum's Education Department. Prior to implementation, the team validated the tool using a facilitator training video provided by Marbles Kids Museum located in Durham, NC. The team watched the video together and individually scored the facilitator in the video using the rubric. They then reviewed the scoring, talked through any large discrepancies, and discussed changes that needed to be made. Observations began in late March of 2019 and continued throughout May 2019. Our AmeriCorps Associate conducted each observation and scored members on three major components: rapport with students, lesson implementation, and facilitation strategies. The scoring also included a scoring for member preparedness. The associate noted play-based learning principles present in the lesson as well as logistical details like who was being observed, the date, location, lesson plan, the members' role in the lesson, the number of children present, and if this was the first or second observation. She observed two members per Learning Club session. Members were able to pick their own observation time. This gave them control over a somewhat intimidating circumstance and provided them with the opportunity to mentally prepare for the lesson. The day after the first observation, members met with our associate for a post-observation discussion and to review their scoring. Questions in the post-observation discussion focused on how members felt throughout the lesson – their comfort

level, how they incorporated play, and the facilitation strategies that felt most/least comfortable. Members' second round of observations were conducted 4-5 weeks after their first. They were scored using the same instrument. Again, a discussion followed members' second observations. Questions were the same with an additional question comparing their experience and growth to their first observed lesson. A copy of the observation instrument is included in Appendix C.

Lesson Plan Rubric

Towards the end of their service, we asked members to write their own play-based lesson plan. Members were given the option to implement their lesson plan at Learning Club but this was not required. Members used a blank lesson plan outline provided by the Museum and were given 3-4 weeks to complete and submit their lesson. Members were familiar with the format of this outline because it was used over the course of their year for play-based lesson plans developed by the Museum. Our AmeriCorps Associate provided limited feedback to members if they sought guidance or if the lesson was going to be implemented in Learning Club. After submission, the Associate and Museum Researcher used the Museum's newly developed rubric to grade members' lessons. The lesson plan rubric graded members' lessons on various lesson plan components. A draft of the rubric was established by the outside evaluator. It was edited and finalized by the Museum Researcher and the Education team. Together, they decided on the weight of each element. Most heavily weighted was the lessons link to play-based learning. See Appendix D for the complete lesson plan rubric used for this part of the evaluation and the Lesson Plan Rubric Findings section for details regarding grading.

Students' Math Pre- and Post-Test

Students' math progress was measured using the Monitoring Basic Skills Progress Assessment (MBSP) tool. This was a pre- and post-test measurement that did not change in difficulty from pre to post. Students were given the pre-test at the start of the Learning Club

experience. After twelve sessions, they were given the post test. For more information on MBSP, see the *Testing* subcategory in the Math Outcomes section of this report.

Limitations

There were several limitations with the methods used this evaluation. Surveys, though easy to implement, rely on members' self-report. Respondents can be unclear in their answers, decidedly skip questions, or inflate their responses. Pre- and Post-surveys are also inflexible in their design. After our first round of implementation, we found a section of the survey that did not provide us with meaningful data. Changing it before the post-survey would have limited the pre/post comparison.

Asking members to be observed can make them nervous. There is also the unpredictability of the sessions. As stated previously, all Learning Club sites and sessions are different. Timing, content, attendance and even member roles change from session to session. All of these variables could impact how a member performs.

Finally, members were asked to complete their lesson plans in English. This could have been a barrier for our English Language Learners and affected their score.

Findings

Pre- and Post-Survey Findings

Surveys show that both before and after training, all but one member had a high understanding of play-based learning when asked to categorize the descriptors on the survey (e.g., is open-ended, has multiple entry points, etc.). Members needed to categorize 6-8 play-based learning descriptors correctly to be considered as having a "high understanding." As a result, no knowledge development was documented by this measurement. The member who scored a medium understanding in the pre-survey was not the same member who scored a medium understanding in the post-survey. See Table 2 for more detail.

Table 2
Members' understanding of play-based learning by descriptors

	High Understanding (6-8)	**Medium Understanding (3-5)**	**Low Understanding (0-2)**
Pre-Survey	14	1	0
Post-Survey	14	1	0

To analyze members' definitions of play and play-based learning, we searched their responses for key words that PCM uses in our definitions. For play, we looked for language related to child-directed, active engagement, and unstructured and/or free. For play-based learning, we looked for word variations on child-centered, hands-on, and open-ended and/or exploratory. We found an increase of words associated with a conceptual and practical understanding of play and play-based learning from pre to post survey – with child-directed (play) and child-centered (play-based learning) vocabulary demonstrating the most growth.

Figure 2. Members' use of key terms in their definition of play

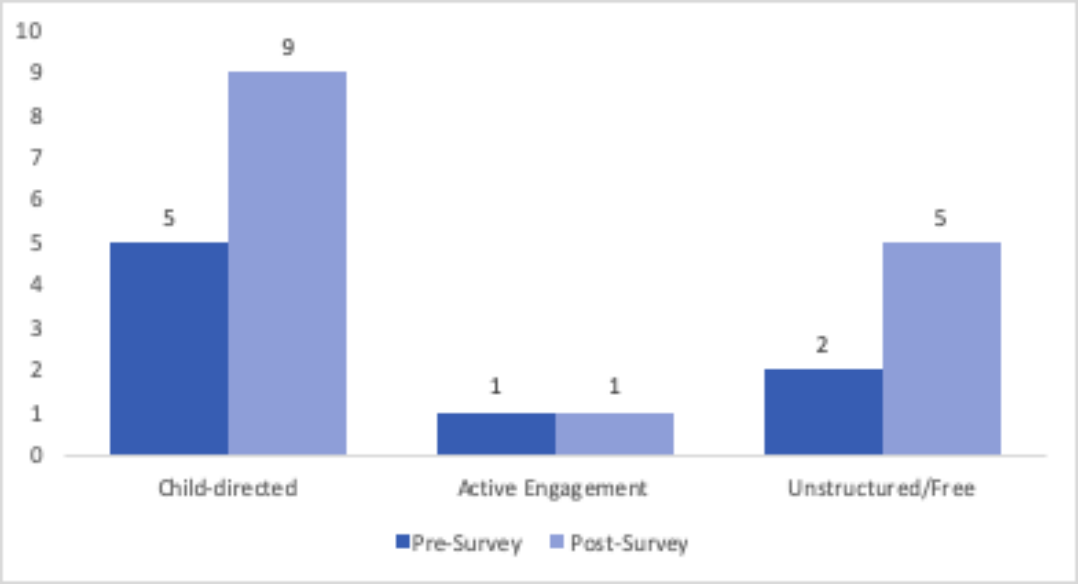
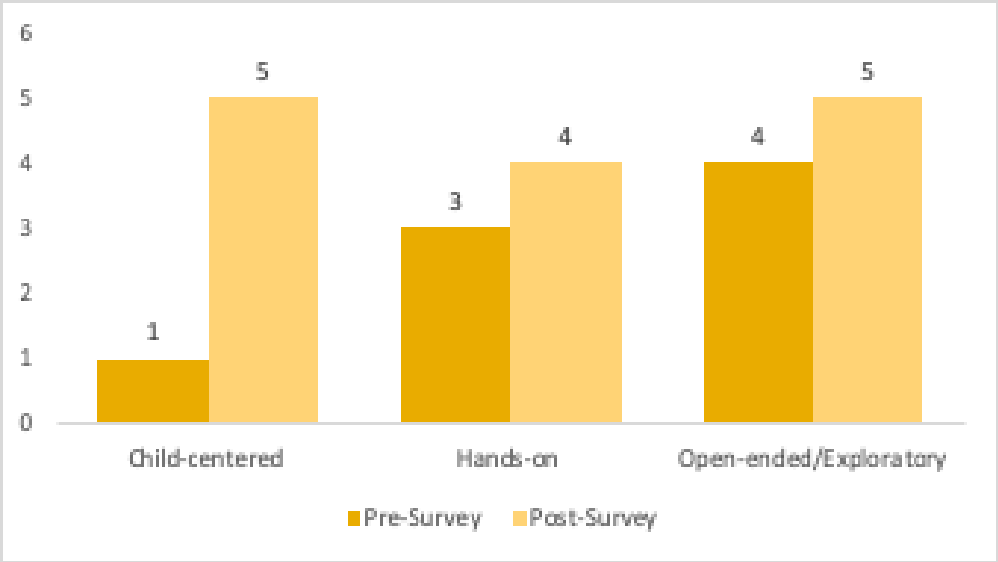


Figure 3. Members' use of key terms in their definition of play-based learning



We also looked at members' definitions more broadly. Below, we have highlighted four definitions of play and play-based learning that we believe exemplify the development of members' definitions and deepening understanding over time.

Table 3
Examples of members' definitions of play before and after training

	Definitions of Play **Before** Training	Definitions of Play **After** Training
Member Ex 1	Acts in which people use their imagination and creativity to channel physical activity, create stories, or otherwise amuse themselves.	Play is a freely-chosen activity following a child's interest and unburdened by objectives. In other words, a child (or adult) choose an activity, based on their interests without a final goal.
Member Ex 2	Play is to be active, to learn, open-minded, perseverance.	Play is a form of learning. When you're playing you are learning; getting your hands-on things; actively engaging, your exploring, they decide to do it their own way, with their interests.
Member Ex 3	Having fun in a carefree manner.	Freely exploring an undirected activity for personal enjoyment.
Member Ex 4	An activity that brings joy to many people of all ages.	Play is an integral part in a child's development. It

		encourages activity, imagination and cognitive development.

Table 4
Examples of members' definitions of play-based learning before and after training

	Definitions of Play-Based Learning **Before** Training	Definitions of Play-Based Learning **After** Training
Member Ex 1	Activities in which people use the same imagination and creativity used in play to explore a learning objective and find a sense of fun and a deeper understanding in the concept.	Play-based learning is the learning done through free-play or guided-play. Here children are encouraged to play within a concept in the hopes of guiding learning but there is still no final goal. If they explore bridges without actually making one, they are not penalized for not having a final product.
Member Ex 2	Engaging with material in a creative and exciting way; there is no right or wrong way to do this and people are allowed to explore what suits them best.	A learning approach that is hands-on, open-ended, and intrinsically motivates a child by building on their interest.
Member Ex 3	Happens with most play, may be most effective with intentional (loose?) direction or set up or with active/critical reflection.	Happens to varying degrees every time play happens. All play involves social, spatial mathematical, logical, physical, emotional, scientific or some other types of learning, even if it is not noted or pointed out. The more open-ended and child led the play is the more types of learning are likely to occur.
Member Ex 4	Learning that relies on the child's own interest and creativity to reach the learning objective.	Guided learning through play, themes are included in activity that support frameworks that will help grow child's understanding.

The majority of survey questions focused on members' confidence, comfort and ease in developing and implementing play-based learning theories in Learning Club. In-depth analysis of these questions shows an average increase of 3.3 points in members' abilities after training

concluded. Questions that highlighted the most change were members' familiarity with lesson plans (Figure 4) and their confidence in observing and discussing play-based learning (Figure 5). Questions that showed limited growth were members' comfort in working with 2nd-4th graders, the ease of bringing play-based learning into a formal learning environment, and their confidence in facilitating play-based learning lessons.

Figure 4. Members' familiarity with lesson plans

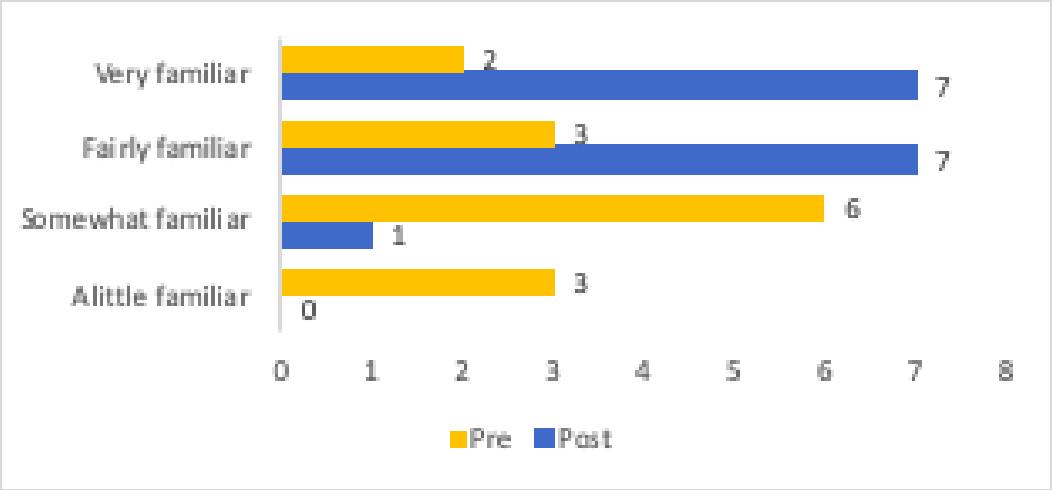
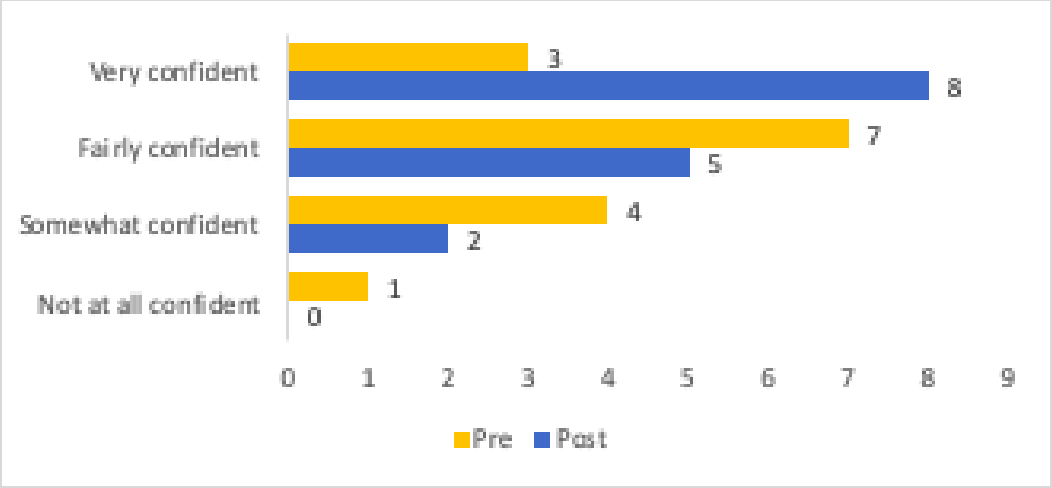


Figure 5. Members' confidence in observing and discussing play-based learning



Pre- and Post-Survey Conclusions

Though we did not quantify any pre/post development through the categorization of play-based learning descriptors, growth was clear in members' written definitions of play and play-based learning. Their definitions showed a richer, more articulate understanding of the Museum's play theory. However, members' confidence in working with 2nd-4th graders and in the facilitation of play-based learning showed little change from pre-training to post-training. While we expected to see growth in members' facilitation confidence, it makes sense their comfort level in working with children remained unchanged. Members' come to us from diverse backgrounds, but all share a strong interest in working with children. In fact, many have prior experience working with children – in both formal and informal settings. In thinking about members' unchanged facilitation confidence, we've considered two options. The first could be contributed to the survey's self-report measure. Members at the start of the program could have overestimated their knowledge and confidence in the delivery of play-based learning and only at the end of training were they accurately reporting their confidence levels. The second could be the timing of post-survey implementation. Surveys were given after six months of training—only halfway through their experience. It would be interesting to see how their confidence might have grown after their entire 11-month service. Implementing a third and final survey at this time is something we aim to do in the future. Where we see our largest gains are in members' familiarity with lesson plans and in their ability to observe and communicate play-based learning. The latter is supported by the growth in vocabulary we saw in their definitions. From this, we can conclude that PCM's in-depth play-based learning training provided members with the skills to recognize play-based learning in practice and communicate it clearly to others.

Learning Club Observation Findings

Participants of Learning Club are 2nd to 4th graders attending Boys' and Girls' Club afterschool programming in the greater Providence area. There is an average of eight to fifteen children in each club. Our MuseumCorps members are divided into four teams of 4-5 members. Members work together to decide what roles to fill within the group. There are opportunities to lead lessons, support lessons, prep for lessons, etc. Some teams rotate roles while others do not. We visit six Boys and Girls Clubs throughout the year. Five of these clubs (Southside, Fox Point, Wanskuck, Manton, and Hartford) are under the Boys and Girls Clubs of Providence umbrella, and one, the Pawtucket Boys and Girls Club, is a standalone. During the school year, we go all year, four days per week, to Pawtucket and Southside, where with other clubs, we rotate days and/or seasons. In summer, we run programming four days per week at two clubs: Fox Point and Wanskuck. Learning Club sessions are intended to be a full ninety minutes but are often cut short due to transition times within the afterschool program (like switching from snack or dinner to the club) or shaping the Learning Club program to the overall Boys and Girls Club structure that requires more time than anticipated. It is important to note that all six clubs are operated separately; therefore, they are very distinct from one another. They have different levels of rigidity (some sites require Learning Club attendance while others do not), site staff roles and dynamics, physical club environments, and discipline support.

While these differences are present, most Learning Club sessions have three distinct parts: the warm-up, the lesson, and clean-up. Some warm-ups tie into lessons and some are separate. Members are expected to plan for warm-ups and lessons on their lesson planning sheets. Members are prepared to facilitate Learning Clubs during pre-service training, during weekly coaching, and during brown bag trainings throughout the year. Beyond our play training described earlier, we train members in behavior management, developmental stages and

milestones, prototyping lessons and activities, and setting up learning environments. Members are also expected to reflect frequently and use a daily and weekly debrief sheet to talk out issues. During weekly coaching, members are able to reflect, debrief, and problem solve with each other, including other teams, and with Education Department staff.

Overall, members demonstrated growth in their Learning Club implementation from their first to second observation. Members' were able to score up to 16 points in each major category (rapport, lesson delivery, and facilitation). When we calculated the cohort's average score, we saw a point increase across all three categories.

Table 5
Average score from first to second observation

	Rapport	Lesson	Facilitation
First Observation	11.5	13.1	10.7
Second Observation	13.9	14.9	13.2
Point Increase	2.4	1.8	2.5

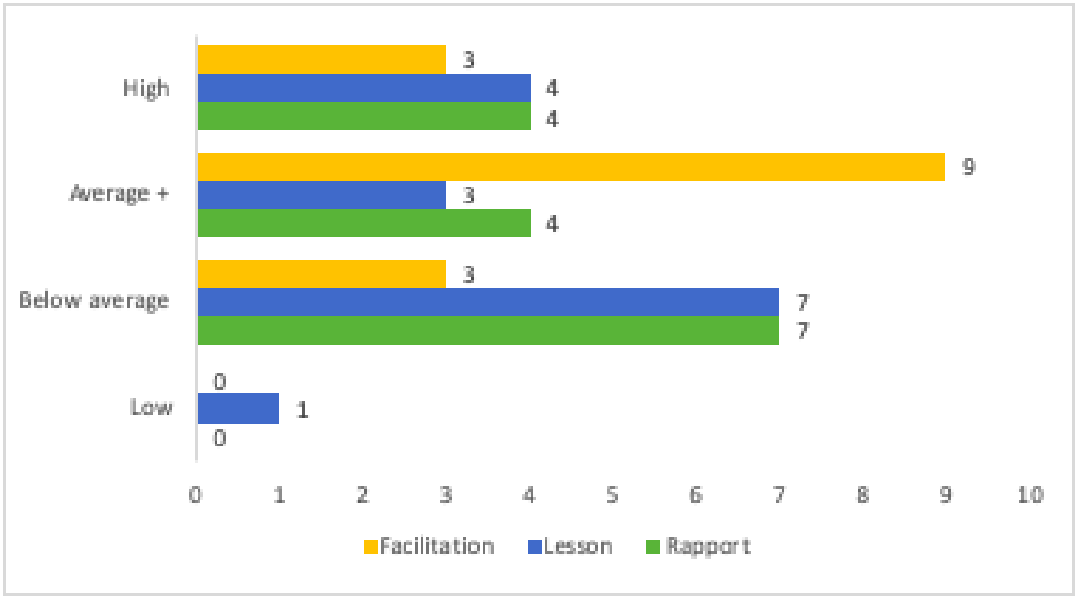
Individually, we looked at the score difference between members' first observation score and their second for each category. We considered members with more than a 4 point increase to show a "high" change, members with a 2-3 point increase to show an "average/average plus" change, members with a 0-1 difference to show a "below average" change and those with negative points to show a "low" change. Only one member demonstrated a "low" change in one category: lesson delivery. This sounds drastic but this member received a perfect score (16/16) for their lesson delivery in their first observation – only losing one point in their second (15/16). Factors that could have contributed to this negative change could have been the number of children in the session, the lesson flexibility or content or the level of support provided from other members. All other members showed growth or remained the same across all other

categories. Our largest change came in facilitation—nine members scored 2-3 points higher in this category during their second observation while three members scored 4-6 points higher.

Table 6
Point increase indicative of level of change in members from first to second observations

Level of Change	**Point Increase**
High	4 & up
Average/Average +	2 to 3
Below average	0 to 1
Low	-1 and below

Figure 6. Members' individual score increase from first to second observation



Members' lesson preparedness remained the same from first to second observations with all members receiving a check for five major components (followed lesson plan, room prepared, materials prepared, materials accessible, and clean up initiated). The play-based learning principles we were looking for in our lessons were: open-endedness (not directive), encouraged exploration, provided multiple entry points, was process-driven (not product-driven), promoted active engagement and included multisensory components. While the type of play-based

principles presented in members' lessons varied from first to second observation, all members used at least three listed principles in both sessions. Seven members showed an increase of 1-2 principles in their second lesson observation and four members implemented five out of six principles.

Learning Club Observation Conclusions

Members' skills in Learning Club lesson delivery increased from our first observation to our second. We saw major growth in facilitation scores with 12 members increasing two or more points. Members' first post-observation discussion could contribute to this growth. In this discussion, we included a series of questions related to facilitation reflection. We asked members to consider the facilitation strategies that felt most comfortable and how the strategies helped them achieve their lesson's learning goals. We also asked them which strategies felt uncomfortable and which they would like to continue to grow in. We intended these questions to focus their attention on facilitation strategies and consider ones they may have overlooked. This activity provided an opportunity to expand their more formal training, to think about their job-embedded performance.

When reviewing members' use of play-based learning principles, we found that "open-ended (not directive)" was the most utilized principle. All but one member used this principle throughout both observations. Seven of our members increased in their principle use (increasing in 1-2 principles) from first to second observation and all members used at least three principles throughout both. Yet, scoring for principles of play-based learning proved to be difficult. As mentioned above, there was little consistency as to which principles members utilized and we saw three members lose a principle from first to second observation. This might have to do with the type of lesson. Lesson content can cater towards different principles – focusing on some

more than others. It could also have to do with the day the lesson was being presented/observed. Many lessons take place across two sessions. The first is often a more directive, introductory lesson. The second is more open-ended and exploratory. If we observed a lesson on its first day, members may have not had the opportunity to put certain principles into practice.

Finally, while we did not conduct an in-depth analysis of members' post-observation discussions, we believe the questions prompted members to reflect on their implementation practice. We informally noted members' eagerness to review their performance with our associate and plan to continue to do this with future cohorts. Looking back, we should have documented conversations more formally.

Lesson Plan Rubric Findings

The current Learning Club curriculum was developed by PCM Education team staff in collaboration with our math coach, Jill Cote, and with input from MuseumCorps alumni. Rather than a set curriculum, we use a lesson plan "menu," and have a number of lessons that MuseumCorps members can shape around a theme and order in ways that make sense to their team and site. These lessons were built off original member lessons, core Museum programs, and Education staff experiences. The first set of lessons, which members use at the beginning of the year, are complete and ready to go. The second set, which members begin to use in the winter, have blank spaces where members need to fill in math and play to notice the Learning Frameworks on their own. In the spring, once members have mastered the lessons provided and have been able to work with Education staff in coaching to fill in the blanks and reflect on their second set of lessons, members are able to develop and implement their own lessons. This offers a scaffolded approach that allows the lessons to feel cohesive with the math goals and the play-based learning mission of the MuseumCorps program while allowing the members to grow in

confidence and practice as educators. All member-developed lessons are approved by Education staff prior to being implemented in club.

All lessons use the same template whether part of the original curriculum or member-developed. Many lessons are designed to be used over two Learning Club sessions, though not all of them, and members are able to shrink or extend lessons to meet club logistics and/or participant interest. All lessons fall under the STEAM umbrella and use a play-based approach to solidify the practice of math skills and instill creative confidence with kids. The lesson plan format used in this evaluation was the standardized lesson plan format that the Museum uses for all Learning Club activities and was therefore familiar to AmeriCorps members.

Our lesson plan rubric highlighted ten components of the lesson plan outline. Each element was weighted by importance with members being able to score a maximum of 120 points. The Museum's Researcher and the AmeriCorps Associate reviewed and scored members' lesson plans together and agreed on each element's score before moving onto the next. Combined, members' overall scores averaged 78.6 points (SD=15.8, Range: 49-100). For analysis we broke these scores into the same categories we used for each rubric element (exceeds expectations, meets expectations, needs improvement, and does not meet expectation). Five members exceeded expectations with scores over 90 points while one failed to meet expectations, scoring under 50. See Table 7 for members' full score distribution.

Table 7
Members' lesson plan score distribution

	Exceeds Expectations (Above 90)	Meets Expectations (70-90)	Needs Improvement (50-69)	Does Not Meet Expectation (Under 50)
Number of Members	5	4	5	1

We also broke down members' scores by each individual element. From this, we wanted to see which lesson plan components members were most successful in and which needed

improvement. Members' most successful element was the Lesson Overview. Twelve of our 15 members received 4-5 points on this component. The second most successful element was the lesson's reference to PCM's Learning Framework. The Learning Framework is a written document that includes the Museum's principles related to play and learning. In it, we define our learners, how they learn, and how they play. We also consider the defining features of our museum experiences (both in the museum and in outreach). Eight members exceeded expectations in this element, clearly referencing the Learning Framework and appropriately listing the types of play and learning taking place throughout the lesson.

Elements that demonstrated a need for improvement were our most important elements: the lesson's link to play-based learning and the link to math. Members' scores were much more varied in these elements. Seven of our members needed improvement or did not meet expectations in their understanding of play-based learning, while five members needed improvement or did not meet expectations in their understanding of grade appropriate math links. All five members who needed improvement or did not meet expectations in their lesson's link to math were included in the seven who needed improvement or did not meet expectations in their understanding of play-based learning. This suggests there was a subset of members who could have benefited from additional training focusing on a review of play-based learning within a lesson and making math connections within play-based learning.

Lesson Plan Rubric Conclusions

Members scored an average of 78.6 points on their lesson plans. If members scored over 90 points, their lessons exceeded expectations. We had five members exceed expectations, four meet expectations, five needing improvement, and one not meeting expectations. The Lesson Overview was our most successful element. However, it was also the easiest component of the lesson plan outline. Members only needed to communicate the purpose of the lesson clearly and

comprehensively to receive the highest number of points available. More meaningful to us, was the second most successful element: the lesson's reference to PCM's Learning Framework. This suggests members are knowledgeable about the Museum's play theory and its link to learning. They can clearly communicate its components and can identify it throughout their lessons.

Members' lesson plans were lacking in their link to play-based learning and to math. Moving forward, we should focus more explicitly on these two elements in our pre-written lesson plans. While we believe members understand these key elements, they may need more support in translating these principles to fit a formalized lesson plan in which they are the sole writer. Another thing to consider when looking at our Lesson Plan Rubric data, the number of members in our cohort who are English Language Learners. Four of our members list English as their second language. This could have impacted their lesson plan writing and, ultimately, their scores. The timing we implemented for our lesson plan evaluation was also not ideal. Lessons were due at the end of June –the start of summer and a busy time. Members could have been distracted with other responsibilities or felt the fatigue of the program, not dedicating the proper time and attention to their lesson plan.

Math Outcomes

The Need

Children's overall math performance in the country remains low. The Nation's Report Card assessment in 2019 shows only 41% of 4th graders in the United States are performing at or above proficiency level. By 8th grade, that percentage decreases to 34%, and by the 12th grade, only 25% are considered proficient (Nationsreport card.gov, 2019). Furthermore, Rhode Island state trends shows math comprehension in the Providence City School District to be even lower than the national average. Only 35% of 3rd graders met or exceeded overall expectations in the RICAS math assessment in 2018 while 8th graders are at 23% (Rhode Island KIDS COUNT,

2019). These percentages are particularly alarming as math continues to be an essential skill for the 21st century. Math confidence is critical not only to workplace competency (National Research Council, 2009) but in everyday life as well.

In their book highlighting research related to mathematics in early childhood, the National Research Council (2009) is particularly concerned about the low performance levels of students from economically disadvantaged backgrounds. Children living in poverty are likely to have difficulty in school – they are less likely to attend preschool, more likely to go to a school with limited resources and have little opportunity to engage in extracurricular activities (Rhode Island KIDS COUNT, 2019). As of 2017, 17% of children in the state of Rhode Island were living in poverty. Almost two-thirds (64%) of those children were from four main cities: Central Falls, Pawtucket, Providence and Woonsocket. These are four cities in which we conduct our Learning Club programming. As of 2018, only 22% of low-income 3rd graders in Rhode Island met the RICAS math expectations (Rhode Island KIDS COUNT, 2019).

Testing

We measured Learning Club participants' math progress using the Monitoring Basic Skills Progress (MBSP) Assessment Tool from PRE-Ed, Inc. Children in grades 2-4 received a pre-test at the start of their Learning Club participation and a post-test at the end. Tests are a research-based standardized set of measurement. They are designed in accordance with the curriculum-based measurement (CBM) model and do not change in difficulty. Because of this, students' increasing score reflects improvement in the students' math abilities. In 2nd and 3rd grade, the test includes things like counting, number concepts, name of numbers, measurement, money, charts and graphs, fractions, decimals, applied computations, and word problems. Fourth grade focuses additionally on vocabulary, grid reading, and area and perimeter.

Again, tests are administered at the beginning of children's Learning Club participation. Members use the initial results to inform activity development (e.g., if children scored low on charts and graphs then members will have children record data during STEM activities in graph or chart form). After 12 Learning Club sessions, children were given the assessment again.

Measurement

The level of improvement that is required for a child to be counted under our improvement measure is 10%. This percentage was selected because the Monitoring Basic Skills Progress math manual indicates that the average normative score increase, over the course of a semester, for children in the 25th percentile is 12% in a classroom setting. As children who attend Learning Club are from schools that have less than a 30% math proficiency and are being assessed in an after-school setting with only 12 contacts (rather than a full semester), a 10% goal was rigorous. The results of the math performance are discussed under Performance Measurement #3.

Performance Measures

PCM listed three performance measures for the 2018-2019 AmeriCorps National and Community Service grant. These measures quantify the:

1. Number of students who started in a Learning Club program
2. Number of students who completed a Learning Club program
3. Number of students with improved performance in math

We surpassed two out of three our performance measures. Our third measure, on paper, did not reach its intended target number and is discussed *Performance Measure #3*, listed on the following page. In reviewing Performance Measures #1 and #2, we see that our Learning Club curriculum was implemented effectively across sites. We surpassed our intended number of

program beneficiaries and saw growth in children completing the intended number of Learning Club sessions.

Performance Measure #1

Title	Number of students who started in the Learning Club program
Indicator	ED1: Number of students who start in an CNCS-support education program
Target Value	250 students
Actual Performance	286 students
Explanation	Children must attend Learning Club two or more times to be counted in this measure. We have achieved 114% of our target for the 2018-2019 year.

Performance Measure #2

Title	Number of students who completed a Learning Club program
Indicator	ED2: Number of students completing a CNCS-supported education program
Target Value	165 students
Actual Performance	190 students
Explanation	Children must attend Learning Club 12 or more times to be counted in this measure. We have achieved 115% of our target for the 2018-2019 year.

Performance Measure #3

Title	Number of students with improved performance in math
Indicator	ED4: Number of students with improved literacy and/or math
Target Value	122 students
Actual Performance	63 students
Explanation	Our actual performance was lower than our target value. We met 52% of our goal. However, after further analysis, we found that 87% of students who made progress in their math performance began with pre-test scores below 50%. This suggests students who demonstrated growth were ones who needed it most. We have established that our testing instrument is no longer aligned to Common Core standards and therefore imperfect. We believe this had a major effect on student measurement. If the test is not aligned to what is being learned within Learning Club, it is likely to be unsuccessful. Working with our math consultant, we identified within our testing instrument a series of questions that were "aligned," meaning those questions matched up with up-to-date Common Core standards and our Learning Club curriculum. When considering only the answers to those "aligned" questions, 92

	students (75% of our target), showed 10% or more growth from pre- to post-test. We are also aware that the 10% marker we use to determine growth was too high. When we think about the average normative score increase over the course of the semester, set by the Monitoring Basic Skills progress manual, we see 12% in the classroom setting. If students engage in math studies for an hour a day throughout a semester, that is a total of 75 hours. Students attending Learning Club, however, engage in 18 hours (1.5 hours x 12 sessions) of math studies at most. That is roughly ¼ of classroom time. With the Monitoring Basic Skills progress manual being 12%, we calculated ¼ of that percentage. This gives us a more realistic target increase of 3%. When examining data with a 3% marker, we saw 103 students, 84% of our target, demonstrating growth. During the 2018-2019 grant year, we also refocused our Learning Clubs to work with a smaller, targeted partnership made up solely of Boys and Girls Club sites in the Providence area. This lowered our overall reach. While we are still exceeding our targets for ED1 and ED2 in terms of the number of students we engage with, our overall reach for students completing the program went down; therefore, our testing pool decreased by 25%. This explains why our percentage of student growth has gone down from last year.

Conclusion

Our focus on PCM's MuseumCorps training sought to measure the impact of our inputs on AmeriCorps members, and ultimately, the children attending our Learning Club programming. Overall, our training was successful in preparing members to implement play-based learning theory within their Learning Club programs. From this evaluation, we were able to document effective aspects of our training and identify areas that need improvement or continued attention. Moving forward, we will provide more continuous implementation support to members – even after our six session trainings are complete. We plan to do this through our lesson observations and post-observation discussions. In this evaluation, we saw major growth in play-based implementation from our first to second observations. This growth could be contributed to members' post-observation discussion. This discussion prompted a reflection on

members' practice and provided them with the opportunity to discuss what they found most difficult. We believe it also provided them with individualized support and encouragement. We will also be more intentional in demonstrating a written link between play-based learning and math theory in our pre-written lesson plan.

Our ED1 and ED2 performance measures show our Learning Club curriculum, which includes play-based learning, is being implemented successfully across sites, reaching the intended beneficiaries at the intended dosage. While we did not meet our ED4 performance goal, we still believe the Learning Club experience has contributed to an increase in children's mathematical understanding. When we consider our data further, we see that students who demonstrated the most growth were those who needed our intervention the most. Since we did not conduct an outcome evaluation, we cannot say with absolute certain that Learning Club had a direct impact on their scores. We can, however, draw inferences from students' math growth and the successful implementation of our play-based learning theory within club. As we move up the evidence continuum, it will be essential to examine the effect of our inputs on student's attitudes and academic performance through an outcome based evaluation. This is something we will continue to work towards in further grant cycles.

References

Fisher, K. R., Hirsh-Pasek, K., Newcombe, N., & Golinkoff, R. M. (2013). Taking shape: Supporting preschoolers' acquisition of geometric knowledge through guided play. *Child development, 84*(6), 1872-1878. https://doi.org/10.1111/cdev.12091

Nationsreportcard.gov. (2019). *NAEP Mathematics: National Achievement-Level Results*. [online] Available at: https://www.nationsreportcard.gov/math_2017/nation/achievement/?grade=4 [Accessed 22 Oct. 2019].

National Research Council. (2009). *Mathematics learning in early childhood: Paths toward excellence and equity*. Washington, DC: National Academies Press.

Rhode Island Department of Education. (2019). *Assessment Results*. [online] Available at: https://www.ride.ri.gov/InstructionAssessment/Assessment/AssessmentResults.aspx [Accessed 12 Nov. 2019]

Rhode Island KIDS COUNT. (2019). *Rhode Island KIDS COUNT factbook.* Providence, RI: Rhode Island KIDS COUNT.

Shernoff, D. J. (2010). Engagement in after-school programs as a predictor of social competence and academic performance. *American journal of community psychology*, *45*(3-4), 325-337.

The LEGO Foundation. (2017). *What we mean by: learning through play*. Koldingvej, DK: The LEGO Group.

The LEGO Foundation. (2018). Learning through play: strengthening learning through play in early childhood education programmes. New York, NY: United Nations Children's Fund.

Van Oers, B., & Duijkers, D. (2013). Teaching in a play-based curriculum: Theory,

practice and evidence of developmental education for young children. *Journal of Curriculum Studies*, *45*(4), 511-534. https://doi.org/10.1080/00220272.2011.637182

Vandell, D. L., Reisner, E. R., & Pierce, K. M. (2007). Outcomes Linked to High-Quality Afterschool Programs: Longitudinal Findings from the Study of Promising Afterschool Programs. *Policy Studies Associates, Inc.*

Weisberg, D. S., Hirsh-Pasek, K., & Golinkoff, R. M. (2013). Guided play: Where curricular goals meet a playful pedagogy. *Mind, Brain, and Education, 7*(2), 104-112. https://doi.org/10.1111/mbe.12015

Weisberg, D. S., Hirsh-Pasek, K., Golinkoff, R. M., Kittredge, A. K., & Klahr, D. (2016). Guided play: Principles and practices. *Current Directions in Psychological Science, 25*(3), 177-182. https://doi.org/10.1177/0963721416645512

Appendices

Appendix A: Pre-Training Survey

AMERICORPS PRE-TRAINING SURVEY

Name: _____

1. To demonstrate what you know about play-based learning, put each of these descriptors (using the numbers 1-12) in one of three lists: *Play-based*, *Traditional Learning*, or *Both*.

Play-based	Traditional Learning	Both

1. Is hands-on
2. Is actively engaging
3. Uses step-by-step instructions
4. Works best with worksheets
5. Is open-ended
6. Based on the learning objectives
7. Encourages exploration
8. The final product is important
9. Needs clear rules
10. Provides choice
11. Difficult to plan for
12. Responds to child's interest

2. In your own words describe:

a. Play

b. Play-based learning

AMERICORPS PRE-TRAINING SURVEY CONTINUED

Circle your answer for each of the following

3. How comfortable are you working in a learning club with 2nd to 4th graders?
   Not at All A Little comfortable Somewhat Fairly comfortable Very comfortable

4. How easy do you think it is to bring play into a learning environment focused on math?
   Very easy Somewhat easy Both hard and easy Somewhat hard Very hard

5. How familiar are you with using lesson plans?
   Not at all A little familiar Somewhat. Fairly familiar Very familiar

6. How confident are you that you could develop a play-based learning lesson for a group of 3rd graders?
   Not at all A little confident Somewhat Fairly confident Very confident

7. How comfortable do you think you will be in discussing your reasoning in developing a play-based lesson plan for use in a learning club?
   Not at all A little comfortable Somewhat Fairly comfortable Very comfortable

8. How confident are you in facilitating a play-based learning lesson to a group of students?
   Not at all. A little confident Somewhat Fairly confident Very confident

9. How confident are you that you could observe a group of students in a play-based activity and describe to your supervisor what learning was going on?
   Not at all A little confident Somewhat Fairly confident Very confident

10. How confident are you that you could observe a group of students in a play-based activity and write up what learning was going on?
    Not at all A little confident Somewhat Fairly confident Very confident

11. What do you think are 3 possible results of a child experiencing play-based learning?
    1.
    2.
    3.

12. List three questions you have about play-based learning that you hope to have answered by the end of your time at PCM.
    1.
    2.
    3.

Appendix B: Post-Training Surveys

PLAY TRAININGS POST-SURVEY

Name: _____

1. To demonstrate what you know about play-based learning, put each of these descriptors (using the numbers 1-12) in one of three lists: *Play-based*, *Traditional Learning*, or *Both*.

Play-based	Traditional Learning	Both

1. Is hands-on
2. Is actively engaging
3. Uses step-by-step instructions
4. Works best with worksheets
5. Is open-ended
6. Based on the learning objectives
7. Encourages exploration
8. The final product is important
9. Needs clear rules
10. Provides choice
11. Difficult to plan for
12. Responds to child's interest

2. In your own words describe:

a. Play

b. Play-based learning

AMERICORPS POST-TRAINING SURVEY CONTINUED

Circle your answer for each of the following

3. How comfortable are you working in a learning club with 2nd to 4th graders?
   Not at All A Little comfortable Somewhat Fairly comfortable Very comfortable

4. How easy do you think it is to bring play into a learning environment focused on math?
   Very easy Somewhat easy Both hard and easy Somewhat hard Very hard

5. How familiar are you with using lesson plans?
   Not at all A little familiar Somewhat. Fairly familiar Very familiar

6. How confident are you that you could develop a play-based learning lesson for a group of 3rd graders?
   Not at all A little confident Somewhat Fairly confident Very confident

7. How comfortable do you think you will be in discussing your reasoning in developing a play-based lesson plan for use in a learning club?
   Not at all A little comfortable Somewhat Fairly comfortable Very comfortable

8. How confident are you in facilitating a play-based learning lesson to a group of students?
   Not at all. A little confident Somewhat Fairly confident Very confident

9. How confident are you that you could observe a group of students in a play-based activity and describe to your supervisor what learning was going on?
   Not at all A little confident Somewhat Fairly confident Very confident

10. How confident are you that you could observe a group of students in a play-based activity and write up what learning was going on?
    Not at all A little confident Somewhat Fairly confident Very confident

1. What do you three examples of play-based learning that you've observed?
   1.
   2.
   3.

2. List three things you've learned about play-based learning from your training
   1.
   2.
   3.

Appendix C: Lesson Observation Instrument

OBSERVATION INSTRUMENT (March 2019)

AmeriCorps member: _____ Date: _____
Learning Club: _____ Lesson Plan: _____
Role of AC member in this observation:_____
Number of observation ☐ 1st ☐ 2nd Number of children: _____

Was there a lesson plan for the day that all AC members were following? ☐ Yes ☐ No
Was room prepared for the day's activities? ☐ Yes ☐ No
Were the materials for the activity prepared in advance? ☐ Yes ☐ No
Were the materials made accessible to the participants? ☐ Yes ☐ No
Were clean-up activities initiated? ☐ Yes ☐ No

Scoring Guidelines

4	3	2	1
Very evident throughout lesson	Evident during most, but not all, of lessson	Evident during a limited portion of lesson	Not evident to any degree during the lesson

Note: For any responsibilities not in AC's role, mark NA

Rapport

	Score	Comment
Demonstrated rapport with participants.		
Showed awareness of participants' needs.		
Interactions with students promoted playful exploration.		
Worked in tandem with other AC members		

Lesson

	Score	Comment
Put into practice principles of play-based learning (circle codes*)		a b c d e f g. Specify:
Appeared comfortable in their role as facilitator.		
Showed familiarity with lesson plan.		
Carried out the goals of the lesson plan.		
Adapted lesson to children's energy level/focus		

***Codes for Principles of Play-Based Learning**

a. open-ended (not directive) b. encouraged exploration c. provided multiple entry points d. process-driven e. active f. multisensory g. other (specifiy in comment section)

Facilitation Strategies

	Score	Comment
Observed situations and responded accordingly		
Asked open-ended questions		
Utlized hands-in-pockets strategy		
Used appropriate language and encouraged communication		

Post Observation Discussion:

How did you [AC member] think the observed lesson went?
Please explain how play helped promote learning in the observed lesson.
What <u>types</u> of learning do you think went on today in the club?
What play facilitation strategies felt most comfortable/natural to you? How did these strategies help you achieve the learning goals? [Be sure to bring up PCM's three strategies if they do not come up naturally.]
What strategies felt uncomfortable? What play facilitation strategies to do you want to continue to grow in?
What might you have done differently?
<u>If second observation</u>, what differences are noted from the first time? How did you grow in play facilitation from the last time you were observed?

Appendix D: Lesson Plan Rubric

RUBRIC FOR LESSON PLANS

Element	Exceeds Expectations	Meets Expectations	Needs Improvement	Does Not Meet Expectations	Points
Overview (5pts)	Statement of lesson/purpose is comprehensive and clear 5-4	Statement of lesson/purpose is included but not specific 3	Limited discussion of the planned lesson 2-1	Overall concept not clear or not listed 0	
Warm Up (5pts)	Successfuly introduces children to lesson 5-4	Some attempt to introduce children to lesson 3	Limited attempt to introduce children to lesson 2-1	Does not attempt to introduce children to lesson 0	
Materials (10pts)	Complete list of material s,use, how children access, and who prepares 10-9	Good list of materials to be used and how 8-6	Limited listing of materials, list not fully planned for the lesson 5-3	Materials are not clear or not listed 2-0	
Process: Steps (15pts)	Detailed discussion of steps, timing, responsibilities 15-13	Discussion of steps included, some mention of timing and responsbilities 12-8	Some discussion of steps but somewhat incomplete 7-4	Discussion of steps in the process confusing, limited, or not clear 3-0	
Process: Consideration and Guidance (15pts)	In-depth considerations and guidance for how the lesson will be presented 15-12	Some consideration for the implementation of the lesson 11-8	Limited guidance and consideration for implementing the lesson 7-4	Little to no guidance and consideration for implementing the lesson 3-0	
Process: Meaningful Extension (10pts)	Suggests meaningful and detailed extensions for children's learning 10-8	Suggests some extensions for children's learning 7-5	Suggests limited extensions for children's learning 4-3	Does not suggest extensions for children's learning 2-0	
Learning Framework (15pts)	Clear reference to Learning Framework; types and characteristics of learning 15-13	Some reference to Learning Framework; mention of types and charaterstics of learning 12-9	Limited or weak reference to types of learning and Learning Framework 8-4	Reference to types of learning and Learning Framework missing or not on target 3-0	
Link to Math (15pts)	Shows understanding of grade levels' math focus areas 15-11	Shows some understanding of grade levels' math focus areas 10-7	Shows limited or weak under-standing of grade levels' focus areas 6-3	Shows no understanding of grade levels' focus areas 2-0	
Link to Play-Based Learning (20pts)	Shows understanding of play-based learning 20-17	Shows some understanding of play-based learning 16-11	Shows limited understanding of play-based 10-4	No understanding of play-based learning 3-0	
Overall Inclusion of Play-Based Learning (10pts)	Play-based theory is threaded throughout entire lesson plan 10-8	Includes play-based theory throughout most of lesson plan 7-4	Play-based theory is limited throughout lesson plan 3-2	Play-based theory is not present in lesson plan 1-0	
				Total Points Earned:	/120