

IMLS Early Learners Collaborative

Year One Evaluation Report, 2012 - 2013

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September 2013



Executive Summary

This report summarizes the evaluation findings of the first year of the Science Beyond the Boundaries Early Learners Collaborative (ELC). The three-year project, funded through the Institute of Museum and Library Services (IMLS), connects science centers and children's museums to enhance early learner programming. In Year One, the ELC brought together five institutions to collaborate directly through regularly scheduled conference call discussions. During these discussions they shared their program experience, ideas on early childhood programs, and their thoughts on current early learner research. ELC also held a one-day Educators Workshop where early childhood staff from 16 museums came together to share ideas and discuss learning within the early childhood audience. This evaluation, conducted by the Research & Evaluation Department of the Saint Louis Science Center, was designed to assess the effectiveness of the collaborative. The main objectives of this evaluation were to gather information about the programs delivered by each partner in order to look into the similarities between programs that may inform program developers, to assess the Year One Collaboration and understand what the partners have gained from the ELC, and to evaluate other collaboration efforts such as the Educators Workshop.

To inform this study, multiple forms of data were collected. Data addressing the partners' knowledge and expectations was collected early in the program year and then revisited near the end of the program year with an online survey. Partner institutions collected data for approximately a five-month period between January and June 2013. This included program participant feedback and staff self-reflections on delivered programs. Museum educators who participated at the workshop provided feedback through an online survey. All forms of feedback included open-ended questions which allowed for more depth of a response than quantitative feedback alone.

Overall, the ELC was most successful in fostering idea-sharing among educators from children's museums and science centers, both large and small. The five Year One partners learned more about their programs and their audiences through program evaluation and discussion of research articles during conference calls. Staff were given a tool to help them reflect on their program through which they were able to share their learning experience with others. The Educators Workshop also provided a forum for collaboration, reaching institutions beyond the five Year One partners. The ELC has illustrated the importance and usefulness of collaboration in the museum field.

Key Findings

- Feedback from program participants emerged as an important tool through which the Year One partners gained new insight into their own programs.
- Effective characteristics for early learner programs were seen through participant and staff comments on certain aspects of the programs.
 - Effective characteristics include: socialization opportunities, open exploration, hands-on activities, takeaway items or ideas, and multiple approaches to content.
- Both Year One partners and workshop attendees appreciated having visuals of ideas shared during presentations.
- Networking with other museum educators was the most useful aspect of the workshop for attendees and most respondents came away with new ideas for their institutions to use.

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Background

The Science Beyond the Boundaries Early Learners Collaborative (ELC), supported by a three-year project grant from the Institute of Museum and Library Services (IMLS), connects science centers and children's museums across the world to enhance early learner programming. This report focuses on Year One of this project. In its first year, the ELC brought together five institutions with programs designed for early learners:

- The **Center of Science and Industry (COSI)** in Columbus, Ohio delivers two versions of their *Early Childhood Workshops*: the first is a one-hour program for infants and their “favorite adult,” the second is an hour and a half program designed for families with children ages 0 – 8. Both provide opportunities for young children to engage in science learning with adults as active co-learners. Both programs are ticketed along with the cost of general admission.
- The **Imagine Children's Museum (ICM)** in Everett, Washington focused on *Play Coach* in Year One. *Play Coach* is a program where educators take materials found at home to demonstrate the link between play and early childhood development through simple activities on the museum floor. It is open to the general public and lasts on average 10 minutes; the program is included with general admission.
- The **Museum of Discovery and Science (MODS)** in Fort Lauderdale, Florida partnered with local libraries in underserved communities to deliver their *Family Science* program. The free program brings parents and pre-school age children together to explore science through stories and hands-on activities at a local library.
- The **Saint Louis Science Center (SLSC)** featured its *Discovery Room*, which introduces children to science through hands-on activities. The *Discovery Room* is a ticketed program where children are encouraged to openly explore the science-related activities for 45 minutes. The Saint Louis Science Center is also the founder and coordinator for the Science Beyond the Boundaries (SBB) network. SBB is a network which shares educational materials, exhibits, program ideas and more to over 200 museums world-wide.
- The **Unizul Science Centre (USC)** in Richard's Bay, South Africa shared a program that introduces children to other parts of the world. *Ramble Around the World* is a ticketed two-hour program for pre-school children on field trips in which they take part in an exhibit, and then learn through a music demonstration and hands-on activities.

Each museum partner participated in quarterly conference calls to share updates on programs and discuss topics within early learning. Over the next two years, 16 more museums will join this collaborative for a combined total of 21 museums.

Along with working with these specific institutions to enhance programs for children ages 0-4, each year, the Saint Louis Science Center hosts a Museum Educators Workshop open to any of the Science Beyond the Boundaries members. In the first year, staff from 16 museums participated in the workshop; six of these institutions will join the ELC in the second and third year of the grant. A total of 34 participants attended the workshop to share content, materials, and their experience in teaching the early learner audience.

Methodology

This evaluation takes a multi-method approach examining the Collaborative's effectiveness. ELC will broaden and use different methods in sharing and applying Early Learner research in Year Two and Three, thus the evaluation may also take a different approach in the following years. For the pilot year, this report looks at the experiences of the participants in each institution's programs, the experience of program staff implementing the programs, the experience of the program partners within ELC, and the experience of participants in the Museum Educators Workshop.

Program participants:

During a five-month period, between January and June 2013, staff at the individual institutions collected participant data through feedback forms designed for the adult caregivers taking part in the program.¹ The feedback forms were based on the Saint Louis Science Center's System for Assessing Mission Impact (SAMI). The SLSC defines Impact as resulting "...from a Science Center offering that enables a participant to make a personal connection between the content and experience of the offering and their own knowledge and experiences. In the short-term, this is illustrated by a change in Knowledge, understanding, Attitude, Interest, or Enjoyment" (Heim, 2009). SAMI was designed to track and report audiences' experiences in educational programs. Program feedback forms, which are completed by participants at the end of a program experience, are a key element of SAMI. The feedback forms incorporate close-ended questions on a four-point scale that address the aspects of Impact identified in the Impact definition. The first question addresses Knowledge and understanding, the second addresses Enjoyment, the third addresses Interest in science, and the fourth addresses Attitude towards science. The sum of the responses to the four questions is referred to as the Impact Score. This method of assessing Impact, which has been in place in its current form since January 2009, is employed across all of the SLSC's educational programs and allows for basic comparisons between programs.

For early learner programs, adults answer the ratings questions from the perspectives of their children. The questions are also modified to consider the different ways in which young children learn. Based on the SLSC's past experience with utilizing SAMI to collect feedback about early learner programs, adults do not necessarily think their young child is learning if they are only playing; however, for the early learner audience, playing and exploring is an important way for children to learn (Anderson-McNamee et al., 2010). To get away from the "learning" bias while adults are answering ratings questions for their children, the knowledge rating question is changed from "To what degree did your child(ren) learn or gain skills from the program activities" to "To what degree did your child(ren) get involved in the program activities." The other three ratings questions remain the same. All questions remained the same for each institution, although minor wording changes were made for each institution depending on program specifics; see **Appendix A** for an example of the form. SLSC evaluators created a protocol for data collection at each institution that was modified depending on the frequency of program offerings at each site. At most, each partner collected participant feedback once per week during their data collection period.

¹ Due to unforeseen political issues, USC was unable to collect program data during the data collection period or complete an end of Year One reflection survey in time for the data to make this report. Any data collected at the end of Year 1 from USC will be included in the final evaluation report.

Staff reflections:

Staff who delivered the programs completed self-reflection forms to indicate what worked well, what was ineffective, and what could be done better the next time. See **Appendix B** for an example of this form. Both the participant feedback and staff self-reflection forms were entered online by program staff and sent to the evaluation team at the SLSC for analysis. At most, program staff completed a self-reflection survey once per week during the data collection period.

Partner feedback:

Staff from each of the partner institutions provided feedback both at the beginning and end of the program year. Prior to active data collection from program participants, institutional partners' needs and expectations were assessed through a group phone interview. At the end of the data collection period, partners completed an online survey in which they reflected on their initial needs and expectations of the ELC and provided feedback about their overall experience in the Collaborative. See **Appendix C** for the questions used for both the initial and end of Year One responses. Following the online survey, participants were interviewed to get more in-depth responses; this information will inform the summative evaluation of the entire three-year project.

Workshop:

Another aspect of the ELC was the Museum Educators Workshop. To measure how the workshop contributed to the effectiveness of the ELC, attendees completed an online survey sent less than a week after the workshop. These surveys utilized the SAMI questions to collect participant feedback on Knowledge gained, Enjoyment of the program, and Interest and Attitude towards science. Respondents also indicated what types of ideas or materials they shared, what aspects they enjoyed most, and what aspects they thought most useful. Other open-ended questions related to what they did not like and what could be improved. See **Appendix D** for the questions asked of participants.

Characteristics of the Sample

Program participants:

During the data collection period, 22,270 adults and children participated in 709 early learner offerings at the Year One partners' institutions. Data was collected at 49 of the offerings. Overall, 277 feedback forms were partially or fully completed by adult visitors; this is roughly a 3% response rate from adult participants. Please see **Tables 1-3** below for each the demographic breakdowns of each institution's program participants.

As **Table 1** shows, SLSC collected 42% of the feedback forms; this was due to their program being offered multiple times per day during the data collection period (which only allowed for a 1% response rate). On the form, parents were asked about the ages of the child(ren) in their group. SLSC respondents accounted for 96% of the total number of child participants, see **Table 2**. For COSI, the majority of children included in the sample were between ages 0-2. SLSC's *Discovery Room* also had slightly more children ages 0-2. The sample of child participants in ICM's *Play Coach* had more children in the 3-4 age range, whereas the sample of child participants at MODS's *Family Science* had more children ages 5-8.

Table 1: Data Collection Totals

Institution	# of programs delivered	# of programs delivered in sample	Total # of adult participants	# of feedback forms collected	Response rate
COSI	20	15	176	72	40%
ICM	16	16	171	60	35%
MODS	5	4	47	29	62%
SLSC	669	14	9,347	116	1%
USC	---	---	---	---	---
Total	709	49	9,741	277	3%

Table 2: Child Demographics

Institution	Total # of child participants	Total # of children between age 0 - 8	# of children participants in sample	# of children, age 0-2	# of children, age 3-4	# of children, age 5-8	# of children, age 9+
COSI	147	147	83	68	11	2	2
ICM	270	270	67	21	26	17	3
MODS	95	88	59	9	16	30	4
SLSC	12,017	11,517	216	72	60	64	20
USC	---	---	---	---	---	---	---
Total	12,529	12,022	425	170	113	113	29

Participants also responded to demographic questions concerning their gender, membership status, and frequency of visitation to the partner institution. The percentages in **Table 3** are organized by demographic for each institution; e.g. of COSI's respondents, 19% were male; 81% were female. Visitation frequency is broken down into three categories: infrequent visitors (one or fewer visits to the museum per year), regular visitors (one or two visits per year), and frequent visitors (three or more visits per year).

Table 3: Adult Demographics in Sample

Institution	Gender		Membership Status		Visitation Frequency		
	Male	Female	Member	Non-member	Infrequent	Regular	Frequent
COSI	19%	81%	72%	28%	48%	11%	41%
ICM	5%	95%	73%	27%	30%	24%	46%
MODS	36%	64%	0%	100%	57%	25%	18%
SLSC	22%	78%	36%	64%	27%	22%	51%
USC	---	---	---	---	---	---	---
Total	20%	80%	48%	52%	37%	19%	44%

Staff:

Multiple staff from each institution reflected on their experiences during their program. A total of 44 reflection forms were filled out by program staff.

Table 4: Staff Demographics

Institution	COSI	ICM	MODS	SLSC	USC
# of staff members represented	5	3	2	3	---
# of reflection forms	14	13	4	13	---

Workshop:

At the Educators Workshop, emails were collected from participants in order to get feedback at a later date. A total of 20 online surveys were at least partially completed, for a response rate of 59% of the 34 participants who were invited to complete the survey. Respondents to the demographic questions (n=18) were 82% female, 18% male. The majority of respondents (41%) were in the 25-34 age range. Respondents age 35-44 and 55-64 both had 17% representation in the sample. Respondents age 45-54 made up 24% of the sample. Most of the respondents (59%) were residents of Missouri or Illinois. Other states represented were Indiana (12%), Nebraska (12%), Washington (6%), and Maryland (12%).

The workshop brought together museums within the ELC as well as other museums not signed up for the Collaborative. Two-thirds of the respondents indicated they were partners in ELC. The Saint Louis Science Center was the only Year One partner in attendance. In addition, eleven participants represented five institutions that will join the Collaborative in its second and third years. Below is a list of the institutions in attendance. See **Figure 1** for graphical representation of workshop attendance by Institution.

Year One Partners

- Saint Louis Science Center, St. Louis, MO

Year Two Partners

- Bootheel Youth Museum, Malden, MO

Year Three Partners

- Discovery Center of Springfield, Springfield, MO
- Koch Family Children’s Museum of Evansville, Evansville, IN
- Museum of Flight, Seattle, WA
- SciTech Hands On Museum, Aurora, IL

Non-ELC Partners

- Discovery Center Museum, Rockford, IL
- Ft. Worth Museum of Science and History, Ft. Worth, TX
- Kaleidoscope Discovery Center, Rolla, MO
- The Magic House, St. Louis, MO
- Maryland Science Center, Baltimore, MD
- National Children’s Museum, National Harbor, MD
- Omaha Children’s Museum, Omaha, NE
- Orpheum Children’s Science Museum, Champaign, IL
- Peoria Riverfront Museum, Peoria, IL
- St. Louis Art Museum, St. Louis, MO



Figure 1: Educators Workshop Attendees

Findings

ELC Partners' Programs (Participant and Staff feedback)

At the four institutions that were able to collect data, feedback forms were filled out by adult participants. Respondents were asked to consider the program from both their perspective and that of their child(ren). This was done to collect information about both audiences' experiences on one form, without having to gather data directly from pre-literate children. For each program, the mean Impact Score was above 14.00. As seen in **Table 5**, MODS *Family Science* had the highest mean ratings in all areas. This program was delivered off-site to underserved audiences who were not likely to attend the museum on a regular basis. SLSC's *Discovery Room* had the second highest Knowledge rating and Impact Score. COSI's *Early Childhood Workshops* had the second highest Interest rating. ICM's *Play Coach* had a lower Impact Score than the other programs, but participants had a shorter experience in this program. *Play Coach* had an estimated stay time of only ten minutes, whereas other programs surveyed lasted between 45 minutes to 1.5 hours.

Table 5: Impact Ratings for ELC Partner Programs

Institution	Knowledge	Enjoyment	Interest	Attitude	Impact Score
COSI (n=71)	3.56	3.69	3.63	3.55	14.43
ICM (n=57)	3.58	3.67	3.44	3.37	14.05
MODS (n=28)	3.96	3.96	3.93	3.93	15.79
SLSC (n=115)	3.79	3.83	3.42	3.43	14.47

The feedback forms included four open-ended questions to address aspects of the program that participants did or did not like, what participants and their child(ren) got out of their experience, and make suggestions to improve the program. These responses were coded for analysis. See **Appendices E – H** for participant comments from each program, organized by code category. Although the four institutions offered differing programs, when looking at the responses from adult participants, patterns emerged through which certain aspects of each program can be compared. This can be beneficial to understanding what parts of early childhood programs work well for their participants.

Figure 2 shows how participants responded to the question, "Please tell us what you and your child(ren) got out of your experience." More than a third of respondents focused on program activities their child(ren) did: "I really believe we got a lot out of the hands on activities. I like the tactile experiences and she did too." A total of 27% of respondents emphasized the content learned: "Learned about shadows and light." More than 20% of respondents commented on the "new" or "different" experience the program provided their child(ren): "He really enjoyed trying new things and exploring- I enjoyed watching him try new things..."

What Participants "Got Out" of their Experience

(Multiple responses possible. Totals exceed 100%)

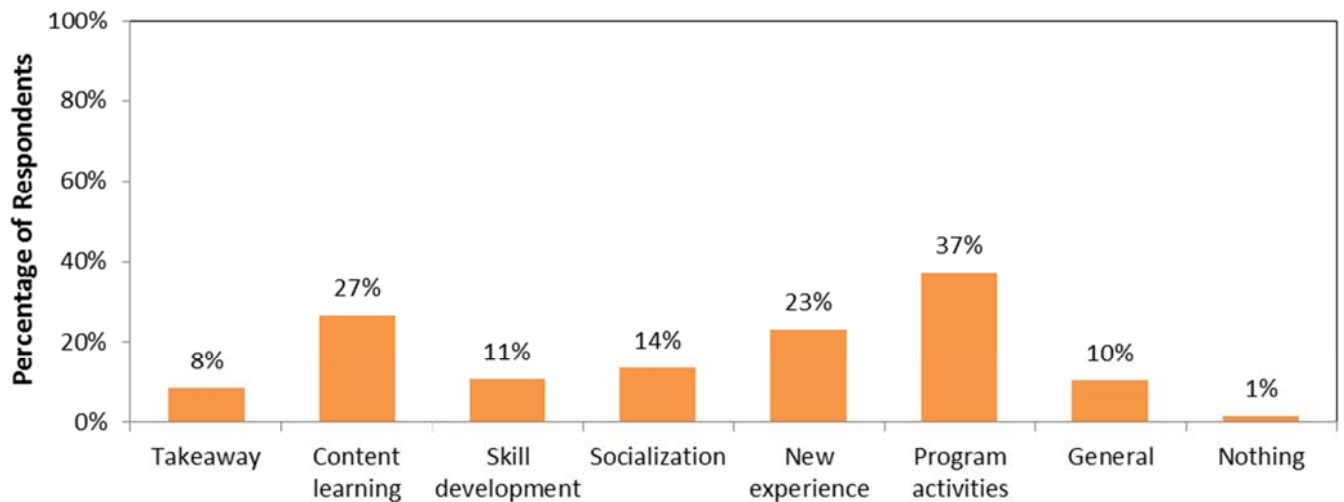


Figure 2: What Adults and Children Got Out of their Experience, Overall

Analyzing participant comments by institution helps to see which types of programs tend to receive participant responses in certain code categories. **Figure 3** shows that the distribution of comments varied by institution.

- A total of 65% of respondents from MODS *Family Science* program mentioned the content their group learned: "We learned about different insects from Africa." *Family Science* programs have three components: a presentation about the subject, a book reading, and a hands-on activity. Content taught is therefore approached in three different ways. This was echoed in the Impact ratings of which MODS had the highest Knowledge rating.
- SLSC program participants are exposed to a large room used for open exploration of activities and science-related toys. More than half of the respondents commented on what their group did and/or what activities they played: "They enjoyed free exploration. My daughter (6) enjoyed building and organizing animals. My youngest (1) liked balls, stacking, + noise making. Son (4) liked trains."
- Respondents in COSI's *Early Childhood Workshops* noted the new type of experience their children were getting through the program as well as the social aspect of the program: "Seeing and feeling all different things and playing with other children." COSI's program is meant to introduce the young learner and their adult(s) to various topics in science in a focused manner by only allowing children within the age group to attend, breaking away from large group settings so that children can interact with other children outside of their visiting group.
- ICM's program *Play Coach* had the highest percentage of respondents comment on takeaways from the program: "Great ideas for things to do at home to build upon experiences learned at the museum." *Play Coach* is a program that shows participants they can create multiple activities out of everyday materials such as paper tubes.

What Participants "Got Out" of their Program Experience, by Institution

(Multiple responses possible. Totals exceed 100%)

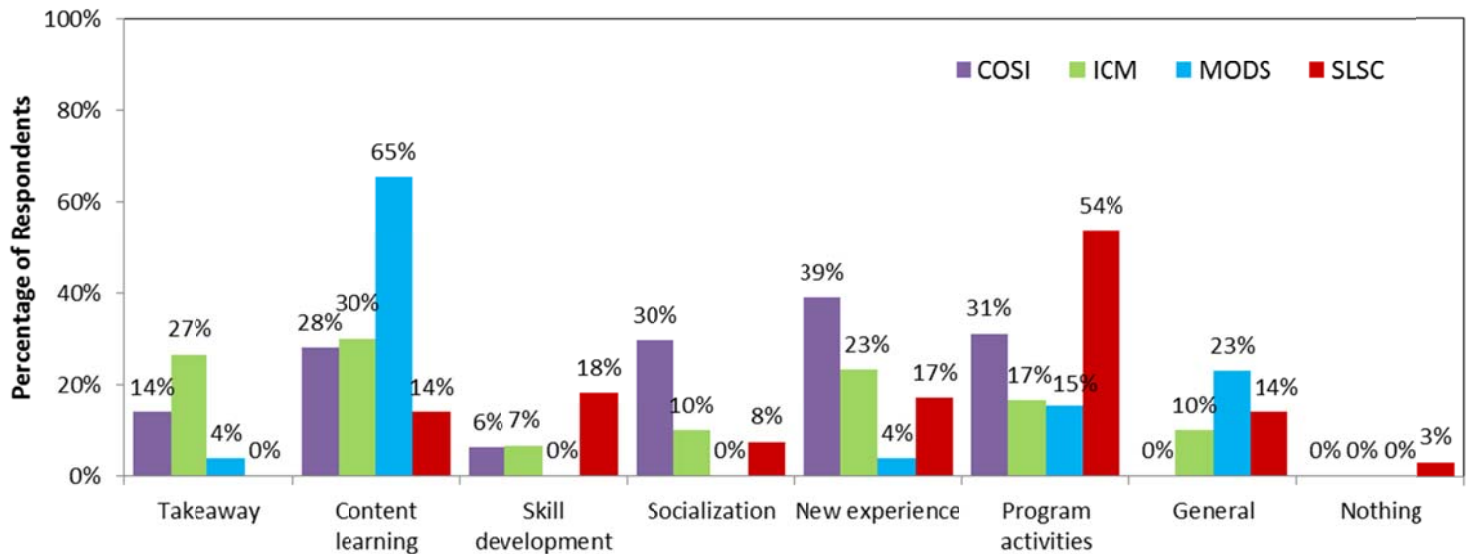


Figure 3: What Adults and Children Got Out of their Experience, by Institution

What Parents Liked Most

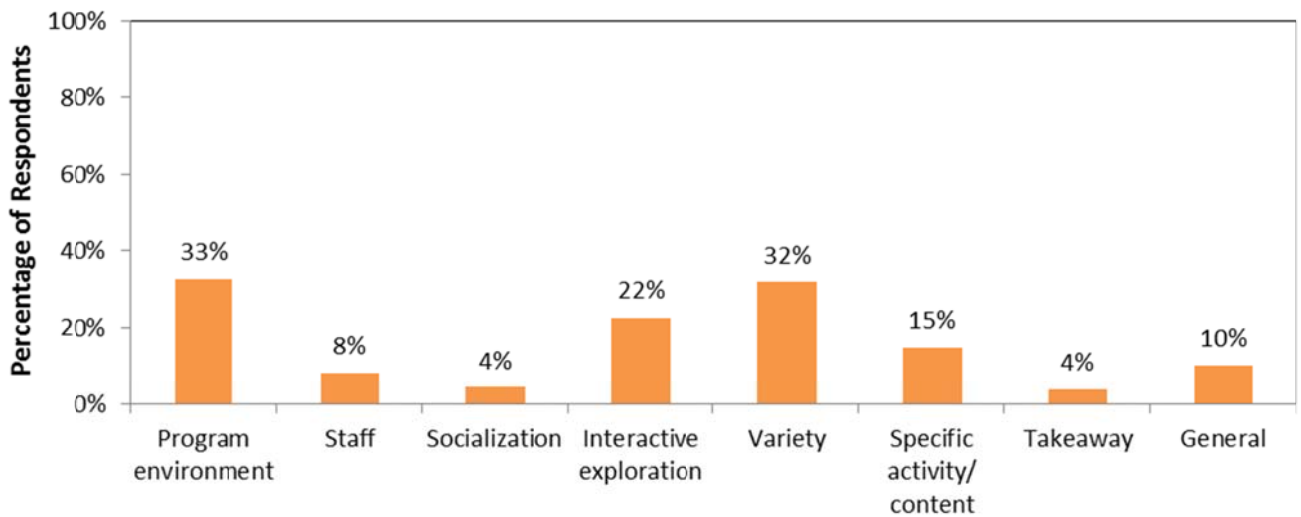


Figure 4: What Parents Like Most, Overall

Adult participants were asked, as parents, what they personally liked the most about the program in order to assess what worked well. As seen in **Figure 4**, parents enjoyed the environment in which the program was set: "Set up of activities- able to stay at one activity for as long as you want!" A total of 32% of respondents also commented on the variety of activities available in the program: "Lots of different activities, learning, and fun."

It should be noted, however, that this high overall percentage of respondents providing comments related to the *Program Environment* or *Variety* of the program may be due to the high percentage of SLSC participants commenting on these aspects of the program. A total of 46% of respondents were participants in SLSC programs. As seen in **Figure 5**, half of the SLSC respondents commented on *Program Environment*, and 43% commented on the *Variety*.

The *Staff* category also allows for an interesting comparison between programs. *Play Coach*, which involves one or two staff members interacting directly with a small audience (usually one family at a time), has 23% of respondents mentioning staff as one of the things they liked most: “I loved the human interaction with a knowledgeable, kind person.” *Discovery Room*, which has more open exploration, has no comments that fit into this category. MODS *Family Science*, with its hands-on activity focus, had 33% of respondents commenting on the *Interactive* nature of the program and *specific activities/content*: “Science of bugs - physiology hands on.” COSI, similar to SLSC, had high percentages of respondents mention the *Program Environment* and *Variety*.

What Parents Liked Most, by Institution

(Multiple responses possible. Totals exceed 100%)

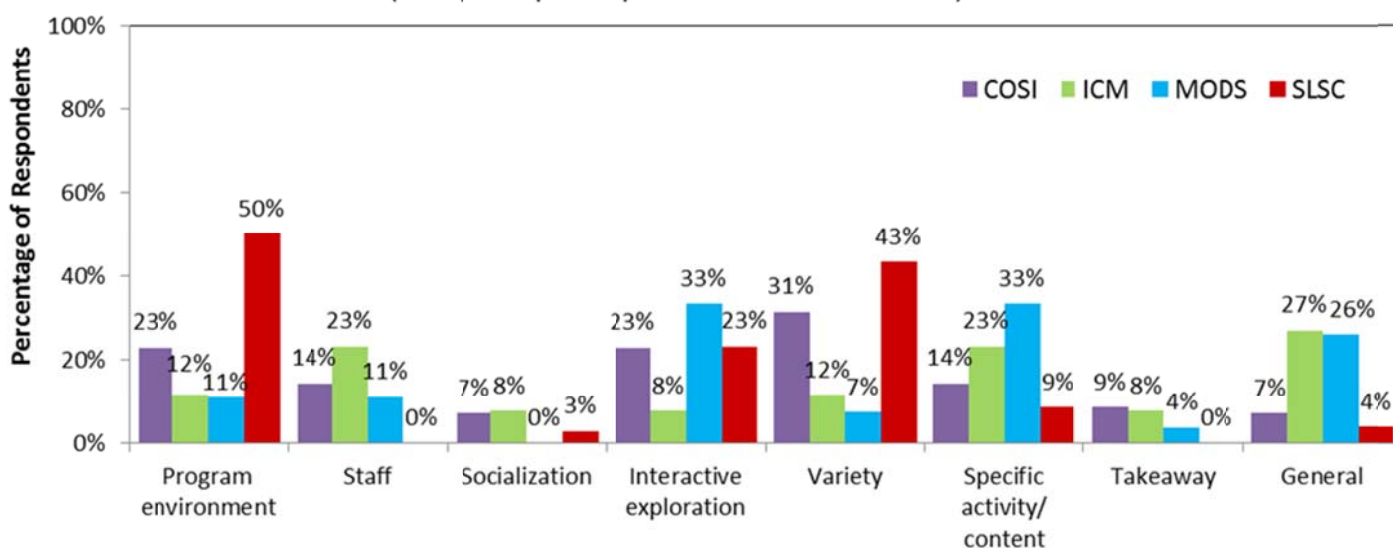


Figure 5: What Parents, Liked the Most by Institution

In addition to program participant comments, feedback from program staff provides another key perspective on program effectiveness. After their program, staff completed self-reflection forms to reflect on what worked well during the program, what was ineffective, and what could be done better in the future. This is an easy way to have staff think about the content presented or methods used in the program and for them to try another approach the next time they teach.

In their reflections, program staff, in general, focused on a specific activity that may have worked better, whereas participants commented on overall experiences. For example, staff at ICM focused on what type of materials and what set up worked best for *Play Coach – Bowling*: “I made new bowling balls by doubling up the dish towels. I also set up at the top of the ramp next to the family restrooms. I was

visible right as they came into the lodge. Once I got one family involved, I usually had a flood of families or kids all at once!” Visitors commented on the program overall: “Using items around the house for playtime.” Staff responses, though, mirrored the responses of participants; for example, when a participant mentioned noise levels in a gallery, staff in that program also mentioned that the gallery was too loud, helping to zero in on problems for both groups. As stated previously, parents at COSI commented on the social aspect of the program and the interaction with various activities. Multiple staff members also commented on these aspects: “...children could interact with each other freely, children loved the hands-on sensory experiences.” See **Appendix I** for staff reflections organized by topic.

When looking at participant feedback from the “like most” and “got out” questions, one can see what were effective aspects of early learner programs from the parent perspective. Parents particularly enjoy social opportunities, open exploration, hands-on activities, content that is reinforced in multiple ways, and takeaway items and ideas. Participant comments can be compared to staff comments about the same program to see if both staff and participants thought similar aspects of the program worked well. It is slightly more difficult to compare participant and staff comments discussing what was liked the least (less effective), or could be improved (done better) because participants usually only take their own experience into consideration. Staff, on the other hand, consider each participant’s experience as well as the logistics behind the program. For example, when designing an edible component to a program, staff may not consider food allergies beyond peanuts. In certain cases it may be good to have alternatives; one child at an *Early Childhood Workshop* “Couldn’t do pudding because of dairy allergy.”

The third question participants responded to was, “As a parent, what did you like least about this program?” When participants did leave a comment on what they disliked, answers usually varied greatly because what they noted most often was specific to the program, such as “Missing pages of the story” [*Family Science*] or “Field trip to wall art” [*Early Childhood Workshops*]. See **Table 6** for the percentages of respondents in each code category. Parents also reported disliking certain aspects of a program’s environment, such as considerations for the adult participants needing “Adult seating” [*Play Coach*] or how poorly other participants misbehaved in a program: “Some children being destructive, and no one stopped them” [*Discovery Room*].

Table 6: What Parents Liked Least

Code Category	COSI (n=29)	ICM (n=9)	MODS (n=23)	SLSC (n=70)
Nothing	28%	78%	74%	46%
Adult considerations	0%	22%	0%	3%
Child considerations	14%	0%	4%	7%
Other participants	0%	0%	0%	9%
Institutional logistics	7%	0%	0%	17%
Program specific	28%	0%	13%	14%
More offerings/time	24%	0%	9%	4%

Program participants also had an opportunity to provide suggestions for improvement by responding to the question: “How could we make the program better?” Program participants were unlikely to include a suggestion; when they did, most comments were also specific to the program. For example, at *Family Science* a participant suggested “more BUGS”. This is in comparison to the improvement suggestion from staff at MODS who reacted to what occurred in the program: “Spend a little less time on the bug body parts. [As noted in the less effective comment] Some of the children lost interest very quickly.” Participants and staff looked at the program improvements in a different way. Participants who were apt to ask for more time in the *Early Childhood* program at COSI suggested, “Make it longer!” A staff member had reflected similarly with time, but suggested instead “Give 10 minute warning before field trip – 5 minutes was not enough.” As seen in the different comments, program improvement can be thought of in different ways. Using the staff suggestion, it would allow for the allotted time before the “field trip,” and may help participants feel they have more time in the program, without making the program longer. Adding time to the program may irritate some participants and may not be feasible for staff resources. See **Table 7** for the percentages of improvement comments by code category.

Table 7: What Could Improve the Program

Code Category	COSI (n= 28)	ICM (n= 12)	MODS (n= 19)	SLSC (n= 66)
None	36%	50%	26%	26%
Institutional logistics	4%	0%	0%	27%
Information for parents	11%	0%	0%	3%
More offerings/time	18%	17%	53%	5%
Program specific	32%	33%	21%	39%

The “liked least” and “improvement” comments may not be as helpful to persons outside of each program in attempting to come up with a model for early childhood programs. If program staff from other institutions want to use the comments in developing their own programs and activities, it would be advisable to compare the “liked least” or “improvement” comments in conjunction with the “liked most” and “got out” comments for the individual programs and compare that information to the program description forms completed by each partner institution.

Collaborative

Beyond evaluating their programs to learn more about their audiences and their needs, and finding out what did or did not work in the programs, Year One partners came to this collaborative to learn from each other. Questions posed of Year One partners in their initial interviews and again at the end of the program year provide insight into how helpful this network has been to them.

Year One partners came into the ELC with expertise in the early childhood and/or science fields. Four of the five partners had multiple years of experience working directly with the early childhood audience. All of them have been in the informal education field for many years. Their needs with regard to building skills and gaining knowledge varied. Staff at COSI was interested in learning “about different approaches and various perspectives to get fresh ideas,” they also wanted something in writing to share how, why, and what they do. USC, which was just starting its children’s museum, wanted to learn more about children’s museums and wanted “to learn new things to implement...” ICM staff wanted to expand their professional growth through research and expand their program’s potential. MODS staff wanted “to expand to new audiences and make new local connections” as well as expand their program. Staff at SLSC wanted to learn from others about the early learner audience, and how to “add more purposeful goals for parents.” Two of the partners wanted to gain a written document they could use to make the case for early childhood programming to stakeholders and funders.

Looking at the data collected near the end of the grant year, the Year One partners’ expectations have been met. On a 4-point scale, where 1 was “did not meet expectations” and 4 was “exceeded expectations,” the Year One partners provided the ELC with a mean rating of 3.25 in meeting their expectations. All five partners agreed that speaking with their colleagues was useful. They shared “ideas across our field nationally and internationally, both learning from our colleagues and offering ideas to them as well” [COSI]. The partners have learned from each others’ experience. For MODS staff, “It has been great during our phone interviews to see what everyone else is doing and to be able to take what they have learned from their programs and make small changes to mine that have made them better.” Partners also learned from the research articles. “The readings and discussions have helped... [to gain] a broader perspective of science education for this age group” [ICM]. The staff from SLSC, who was the only Year One partner to attend the Educators Workshop, mentioned the workshop as a place where they gained new ideas for their programs.

The partners were asked how the ELC has affected their institution. As with the programs, sharing ideas has benefited the institutions as well; ICM staff has applied ideas discussed during the conference calls in other early childhood programs they offer. Funding and recognition as Year One partners have benefitted two of the partners in their pursuit of additional grant funding for other programs. New program ideas, which were able to go through testing with staff and visitors because of IMLS funding, can now be shared among other partners who will not have to develop a program from scratch. Particularly for ICM staff, the IMLS funding was used to cover “staff time to run *Play Coach* regularly, and through doing this we were able to discover new ways to implement the program.”

ELC also advanced the partners’ thinking about their programs and early childhood learning in general. For ICM staff, “it gave me a broader context to think about how I teach and how I train others to teach

this age group.” Using research articles about early childhood learning, the partners “talked about how much these children are capable of at such a young age” [MODS]. They had the opportunity to rethink how they approached their young audience with science concepts.

While it was not directly mentioned in their expectations for the Collaborative, the evaluation component emerged as an important piece of the partners’ experience in the ELC. Throughout the data collection months and during the conference calls, partners cited using the participant feedback. For staff at COSI, “participating in the collaborative has reminded me of the importance of evaluation...” In particular, the modifications partners made, mostly came “from the feedback we got using the surveys from the collaborative” [ICM]. A parent at the *Early Childhood Workshop* at COSI indicated wanting further information about the activity, value and rationale. As a result, COSI staff are now working to incorporate that information. Staff at MODS, who had indicated wanting to reach new audiences, learned through the evaluation that the audience going to *Family Science* were not members of the institution. With the other institutions, early learner programming attracted high numbers of members. As *Family Science* was off-site and partnered with another organization, staff discovered this was one way to reach an audience outside of their membership and general visiting public.

Having a visual context was important to at least one partner. “It would be nice to meet with some of the other institutions and see what they are doing with their audience first hand” [MODS]. To address this, the collaborative meets at the ASTC conference to further the sharing of information. Another partner, ICM staff, pointed out the helpfulness of pictures in understanding what other institutions were doing. Another improvement comment to note is a request for “more emphasis on ensuring that the activities shared are developmentally appropriate and based on what we know about best practices for young children and families” [COSI].

Educators Workshop

The ELC approached sharing in multiple ways: by working together and sharing between partner institutions, as well as holding a regional all-day workshop for other museums in the Science Beyond the Boundaries network. Attendees of the Workshop completed an online survey that addressed their experience and asked about the effectiveness of sharing between institutions. Program participants gave the workshop an overall Impact Score of 13.60 (n=20). The Knowledge rating (3.05) was lower than the other three categories. Attitude towards science (3.60) was the highest followed by Enjoyment (3.55) and Interest (3.40).

Workshop participants wrote largely of gaining ideas for activities and programs for their early learner audience: “It was great to hear what types of programs and activities other institutions use for this age range. I felt inspired to move forward with my own program development.” Overall, 89% of respondents (n=18) came away with new ideas that they saw their institution using. Only 6% of respondents felt they came away with new ideas but would not be able to utilize them, and another 6% indicated that they did not come away with any new ideas.

Figure 6 below summarizes the coded responses to the question, “Please describe what you got out of this workshop.” More than half of the respondents stated they took away activity or program ideas. A total of 32% of respondents identified networking as another aspect of the program they got out of the workshop: “Networking opportunities, program ideas to consider to enhance pre-k opportunities, museum exhibit spaces geared to early learners.” More than a quarter of respondents also noted that, beyond networking, they had the chance to speak with/hear from other museum educators and see how their programs and institution compares: “One of the biggest things I got out of the workshop was seeing how we compare with other museums in the programming and types of activities we are providing to our visitors.” See **Appendix J** for all participant responses.

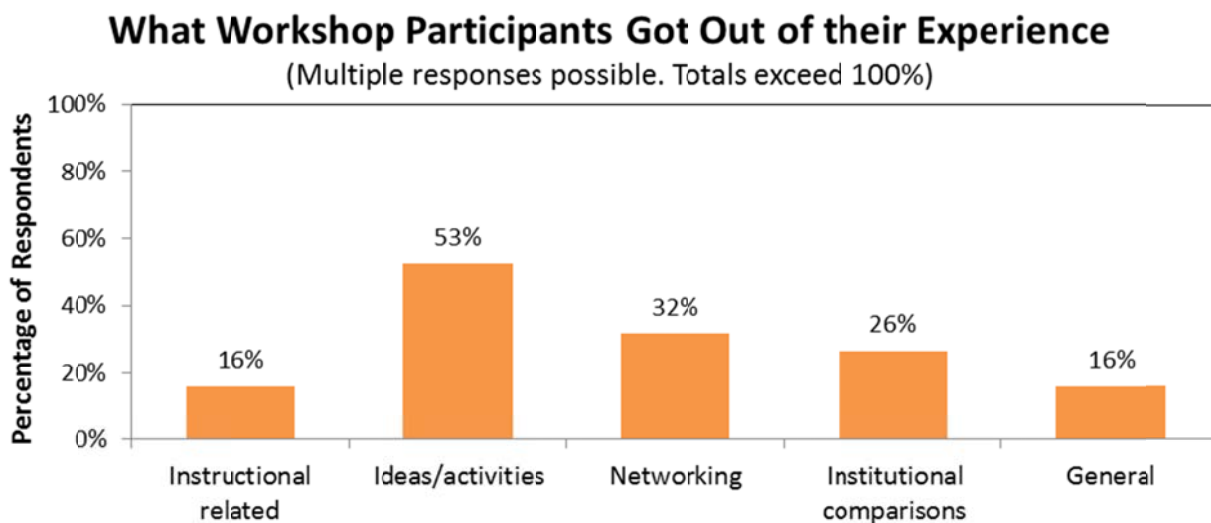


Figure 6: What Museum Educators Got Out of their Workshop Experience

As the goal of the workshop was to share across institutions, respondents were asked what type of information they shared with other attendees. In a closed-ended question, where respondents could choose multiple options, a total of 72% of respondents said they shared *activity examples*. A high percentage of respondents (61%) shared *program examples*. Fewer respondents (17%) shared *materials or thoughts about materials*. The fact that fewer respondents shared materials may explain why program and activity ideas were cited more often in responses to the open-ended questions. No respondents stated they shared *exhibit examples*; however, 6% of respondents said they *did not share/did not have an opportunity to share*, which they explained by describing that they felt they did not have enough experience. A few respondents indicated they also shared *professional development ideas and anecdotes about small museums with small budgets*.

The most useful aspects of the program for the educators were the networking opportunities. As seen in **Figure 7**, a total of 47% mentioned networking as the most useful component of the workshop: “The opportunity to meet others in the field to collaborate with!” This is similar to the reactions of Year One partners to their experience in the Collaborative. Participants found speaking with colleagues about their knowledge and thinking behind their programs to be very useful. The second most useful was the sharing of ideas: “...sharing ideas is ALWAYS so helpful!” Additionally, seeing examples of materials and an early childhood space (SLSC’s *Discovery Room*), was cited as the most useful by 21% of respondents.

What was Most Useful for Workshop Participants

(Multiple responses possible. Totals exceed 100%)

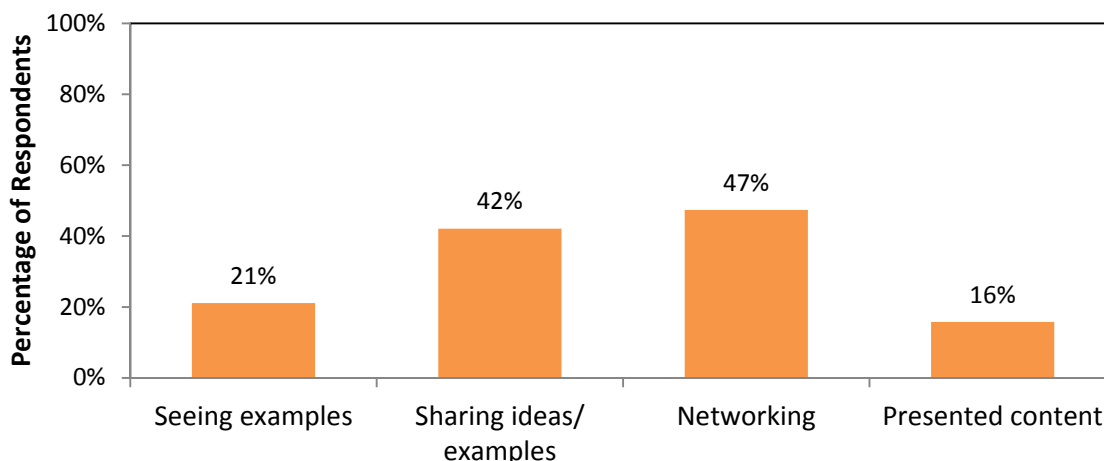


Figure 7: Most Useful Aspects of the Workshop

Just as in the partner institutions’ programs, workshop participants focused on specific examples for what they liked the most. A total of 39% of respondents stated that “Beebots” (an activity shared by the partners from the Museum of Flight) was their favorite activity and a great way to introduce early learners to programming and robotics: “The bee bots. Our focus is on STEM so this activity is perfect.”

Table 8: What Workshop Participants Liked Least

Code Category	Percentage of Respondents (Multiple responses possible, total exceeds 100%)
Needed more time	39%
Program organization	33%
Facilities	17%
Nothing	17%

On the other side, 39% of respondents felt that they needed more time for the workshop (see **Table 8**). They wanted more time for exploring the Saint Louis Science Center, time to speak more with colleagues, and time to try out other activities in more depth: “Wish there was more time to meet everyone and share ideas.” Another issue mentioned by more than 25% of the respondents pertained to the organization of the workshop. Multiple respondents stated not knowing what they needed to share or talk about: “The lack of organization. It was unclear what the intent and purpose of the conference was. No one was sure what they were supposed to speak about, or bring, or how it was going to be shared.” Respondents thought improvements to the workshop would be clearer with “pre-workshop notes” to guide them and more time for focused discussion and sharing.

Conclusion and Recommendations

The ELC's most successful characteristic has been its ability to foster idea-sharing and adaptation between children's museums and science centers both large and small. Through the ELC, numerous institutions and early childhood educators have had the opportunity to learn from each other. The five Year One partners shared ideas related to early childhood through conference calls. They learned more about their programs and their audiences through both program evaluation and the content within discussion articles. Staff were given a tool to help them reflect on their program through which they were able to share their learning experience with others. The Educators Workshop also provided a forum for collaboration, reaching institutions beyond the five Year One partners. In most cases, this sharing network has been effective, with museum educators reinforcing the importance and usefulness of collaboration in the museum field. In a few noted cases, the coordination of the collaboration has opportunities for improvement. Below are key findings and recommendations for the second year of the ELC.

- The ELC has allowed for multiple institutions to share ideas and content. A few educators requested more of the content be based on best practices.
 - In addition to ELC partners and workshop participants sharing personal experiences, provide more content based on research into the best practices for the early learner and family audiences.
- The evaluation itself, and in particular the feedback from program participants, emerged as an important tool through which the Year One partners gained new insight into their own programs.
 - Use evaluation results as discussion topics alongside external research.
- Effective characteristics for early learner programs were seen through participant and staff comments on certain aspects of the programs. These include social opportunities, open exploration, hands-on activities, content that is reinforced in multiple ways, and takeaway items and ideas.
 - Experiment with program characteristics/styles that lead to particular participant short-term outcomes.
- Workshop attendees gained ideas for activities and programs, although there was confusion from some respondents on the intent of the program.
 - Provide clearer details for museum educators prior to the workshop as to what they should expect and what is the goal of the workshop.
- Networking with other museum educators was the most useful aspect of the workshop for attendees and most respondents came away with new ideas for their institutions to use; however, participants asked for more time to network and explore.
 - Allow more time or arrange the schedule so there is more time for informal networking and exploration of the host institution.
- Both Year One partners and workshop attendees appreciated having visuals of ideas shared during presentations.
 - When possible, include photos or have the contributors include photos of what is being discussed.

Sources Cited

Anderson-McNamee, Jona K. & Sandra J. Bailey. (April 2010). The Importance of Play in Early Childhood Development. *MontGuide: A Self Learning Resource From MSU Extension, MT 201003HR*. Retrieved from: <http://msuextension.org/publications/HomeHealthandFamily/MT201003HR.pdf>

Heim, Jennifer. (September 2009). In Pursuit of Impact: A Case Study from the Saint Louis Science Center. *Informal Learning Review, No. 98 Sept.-Oct. 2009*.


Appendices A - K

- Appendices A – D are samples of instruments used in data collection with program participants, staff, Year One partners, and workshop attendees.
- Appendices E – H contain the comments, organized by category, from each open-ended question on the participant feedback forms.
- Appendix I contains comments from staff self-reflection forms.
- Appendix J contains responses from workshop attendees to the open-ended questions in the online survey.
- Appendix K includes comments from partners in the end of Year One online survey.

If code categories were created for the data set, the categories and their definitions are listed in a table above the corresponding comments. Comments are organized by code category or topic. In many cases, comments have been coded into multiple categories, in which case the comments have been organized by and presented under their primary code category. Brackets [] indicate evaluator notes.

Appendix A: Sample Program Participant Feedback Form

ADULTS: Please describe your child(ren)'s Family Science experience.

To what degree...				
	Not at all	Only a little	Quite a lot	A whole lot!
...did your child(ren) get involved with the Family Science activities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...do you think your child(ren) enjoyed the activities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...do you think today's experience will make your child(ren) interested in trying other science-related activities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...do you think today's experience will enhance your child(ren)'s attitude about science-related explorations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please tell us what you and your child(ren) got out of your Family Science experience.

As a parent what did you like most about this program?

As a parent what did you like least about this program?

How could we make Family Science better?

Including today, how often has your family visited or participated in a program with MODS?

- 1st time ever
 1st time in last 12 months
 1-2 times/year
 3-4 times/year
 5+ times/year

Your gender: Male Female Your ZIP code: _____

Number of children in your group in each age range: 0 – 2 _____ 3 – 4 _____ 5 – 8 _____ 9 and up _____

Your age: 14 – 17 18 – 24 25 – 34 35 – 44 45 – 54 55 – 64 65+

Does your family have a membership to the Museum of Discovery and Science? Yes No

To receive an invitation to participate in a future survey about this program, please give us your e-mail:

Staff use only:	Presenters:
Program Title:	
Date of Program:	Notes:
Start Time:	

Appendix B: Staff Reflection Form

Presenter Name _____

Date filling out form _____

Program Staff Self-Reflection Form

After delivering your program, please take a moment to reflect on how it went.

Institution _____	Number of participants _____	Participant age ranges
Program _____	Audience	<input type="checkbox"/> Newborn to pre-k (0-4)
Date of program _____	<input type="checkbox"/> Early learners	<input type="checkbox"/> Elementary (5-10)
Start time _____	<input type="checkbox"/> Early learners and parents	<input type="checkbox"/> Middle school (11-13)
	<input type="checkbox"/> Early learners and parents w/ older children	<input type="checkbox"/> High school children (14-17)
	<input type="checkbox"/> Early learners and teachers	<input type="checkbox"/> Parents
		<input type="checkbox"/> Grandparents
		<input type="checkbox"/> Teachers/Educators

Which aspects of the program worked well?	What aspects of the program were less effective?
What will you do differently next time?	Other comments:

Thank you for your input!

Appendix C: First-Year Partner Questions

Front-end Questions (asked verbally):

What expertise, relative to early childhood learning, do you bring to the collaborative? Both as an individual and as an institution?

In general, how would you describe your needs with regard to building your knowledge and skills related to early childhood learning? Individually and/or institutionally?

What do you hope to gain through your participation in this collaborative?

Summative Questions (asked through online survey):

To what degree has participating in this collaborative met your expectations?

What knowledge and/or skills have you and/or your program staff gained by participating in the Early Learners Collaborative?

How has participating in the collaborative affected your institution? If it hasn't, please explain.

How did participating in the Early Learners Collaborative affect your thinking about early childhood learning in general / your program specifically?

What modifications to your program have you made as a result of information shared through the collaborative? If you haven't made any modifications, please indicate.

What would you like to see changed for the next program year?

What advice/information would you like to share with the second year partners?

Early Learners Educator Workshop

Thank you for taking the time to provide us with feedback on your experience at the Early Learners Educator Workshop.

The survey will take approximately 5-10 minutes to complete. Please note that questions marked with an asterisk (*) require a response.

Early Learners Educator Workshop

*1. To what degree...

	Not at all	Only a little	Quite a lot	A whole lot
...did you learn content and/or skills from the workshop?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...did you enjoy the workshop?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...did this workshop make you want to try another experience with preschool science education?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...did this workshop reinforce or increase any positive attitudes you have towards preschool science education?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. Please describe what you got out of this workshop?

3. What was the most useful aspect of this workshop? Please explain.

4. What did you like least about the overall workshop?

Early Learners Educator Workshop

*5. What type of information did you share at the workshop?

- Activity examples and ideas.
- Materials and thoughts on materials.
- Program examples and ideas.
- Exhibit examples and ideas.
- Did not share/did not have an opportunity to share at the workshop.
- Other (please specify)

***6. Did you come away with any new ideas or activities that you will use in your institution?**

- I did not come away with any new ideas.
- I came away with new ideas but will not be utilizing them.
- I came away with new ideas that I see my institution using.

***7. What was your favorite activity or idea that was shared?**

8. How could we improve the workshop?

Early Learners Collaborative

***9. Is your institution participating in or scheduled to participate in the IMLS Early Learners Collaborative?**

- Yes
- No

Early Learners Collaborative

10. What type of partner is your institution?

- First-year partner
- Second-year partner
- Third-year partner

Early Learners Collaborative

11. What are your expectations for this collaborative?

12. How can we make workshops like these more useful for your programs?

Early Learners Educator Workshop

13. Choose the category that contains your age:

- 18-24 25-34 35-44 45-54 55-64 65+

14. I am...

- Male
 Female

15. Please provide your ZIP code (5 digits only please):

16. If you have any additional comments please include them here:

Appendix E: Please tell us what you and your children got out of your program experience.

Code Category	Code Definition
Take away	General or specific mention of ideas or physical items that participants took away from the program.
Content learning	General or specific mention of content learned/explored in the program; learning about science in general is included in this code.
Skill development	General or specific mention of skills improved/built during the program. Examples include problem solving, creativity, observation skills, etc. Specific types of socialization, such as sharing, are included in this code.
Socialization	General or specific mention of children and/or families interacting with other children and/or families.
New experience	General or specific mention of the program providing new or different experiences, activities, learning opportunities for its participants.
Program activities	General description of activities or aspects of the program. Also includes specific mention of what participants do in the program, such as “stacking” or “building.” Interaction (playing or hands-on) with activity materials is included in this code.
General	General descriptions of enjoyment or learning without reference to content or experiences. Only used when other codes do not apply.
Nothing	Mention of getting nothing out of the program, or a negative response from a participant. Only used when other codes do not apply.

Takeaway

Play Coach – Bowling

Finding recycled bottles to make a game
Using items around the house for playtime

Play Coach – Find It

Great ideas for things to do at home to build upon experiences learned at the museum
Fun ideas to try
Ideas [2]

Play Coach – Jars & Lids

I learned about an inexpensive way to teach matching and finding objects

Early Childhood Infant Workshops

Learned he is ready for us to get our sandbox out at home
It gives us ideas of things to do at home.
Ideas of various activities for home play and learning

Early Childhood Family Workshops

That you can use simple things from your house to have fun- fruit, cornmeal, beans don't need toys

Content learning

Play Coach – Bowling

Stacking (how/what), direction to roll to knock down bottles, force, velocity, weight.
Learning how to re-use items that usually get thrown away

Play Coach – Find It

Recognizing letters, shapes...
Learned to look for objects, shapes and letters

Play Coach – Magnets

A basic understanding of magnets
Learning about magnets
Coach explained how magnets work

Appendix E, cont'd.

Early Childhood Infant Workshops

Enjoy science with other children
Exploration of textures
Exploring introduction to science
Exploring lots of textures
Great exploration of art. Lynne is a great instructor!
He explored a lot and had fun and got socialized
He was able to interact with other kids and explore art
Introduction to new activities and sensory things
Learned about shadows and light
Painting and textures
To explore bugs

Early Childhood Family Workshops

[Child] said that he learned a lot about paint. He learned about colors.
A great time, learned a lot about bugs!
Chance to explore, learn about color
Great early beginning to science and experiment exploration
Learning about bugs

Family Science – Bugging Out

Better understanding of nature
Science of Bugs - Physiology hands on
The parts of the bug.
Learned about bugs and art.
We learned about different insects from Africa.
We enjoy finding out about insects and bugs.
Learn about butterfly
Learning about insects and spiders.
We learn where the spider web comes from.

Family Science – Stomp Rockets

FUN! How rockets fly and got to take a rocket home.
How rockets work.
Air and Rockets - the energy in air.
Learn about fuel and propulsion.
Fuel causes explosive energy in one direction to propel the rocket in appropriate direction.

Family Science – Oobleck

We learned about Newton's law and how to make slime.

We learned some facts about chemistry.
Chemical reactions

Discovery Room

We learned more about the Native American culture, space, and the patience of building things.
History w/ Native American, sensory w/ water, creativity w/ hospital
Learned about gravity, momentum, sound, bugs, & puzzles, water play & current
Learning about gravity and wheels
Learned about Gravity, sounds, music
The moon has craters (7 y/o words).
Fun, learned about "medicine" & magnifying things.
She learned about magnets - positive & negative
Static electricity makes "owies"
Info re: animals + science + nature. The ability for unhindered exploration
Try new things and show how they work

Skill development

Play Coach – Bowling

Wonderful problem solving/creative play
She tried different ways to bowl and made predictions. She saw household items as lab/science materials. We wouldn't have stayed in ball/ramps as long without it.

Early Childhood Infant Workshops

The desire to explore more.

Early Childhood Family Workshops

Learns to play with others
Exploration, independence, curiosity, prediction

Discovery Room

Curiosity, exploring
Sharing, exploring, problem solving
He got to explore on his own in his own way. He is very curious about everything.
He mostly played with the marble run & train set. Learned about sharing and playing with other kids.
Sense of exploration, inquisitiveness, independence
The kids figure things out on their own

Appendix E, cont'd.

Our 2 children enjoyed free play. They loved how they could use their imagination
Opportunity to engage new ideas and creativity through active play.
That the child can try and put to work his ideas, plans

Socialization

Play Coach – Find It

Talk to other adults and learn different things
Interaction and creative play

Play Coach – Jars & Lids

He loved the interaction with the coaches

Early Childhood Infant Workshops

Socialization and interaction
Discovering science in safe environment with other children his age
Fun w/ each other and with other families
Great to learn about colors and friends
Socializing, bugs, new experiences
Great socialization and exploration
Great to try new things and make new friends
Socialization; new experiences
Seeing and feeling all different things and playing with other children

Early Childhood Family Workshops

Fun, together and bean soup
We got to interact with other kids and follow directions
Time together, great hands-on things to do
Experience being with other children; ideas to try with my daughter

Discovery Room

Bonding time
Exposure to playing with other children (stay at home only child)
It gave me time to interact with my son with educational toys!
Socialization w/ educational toys
Fun playing & discovery time together
She had so much fun she is 3 so it's nice to get her around other kids

New experience

Play Coach – Bowling

I enjoyed seeing the girls engaged and trying new activities.
Another fun museum activity- something new
New activity to play

Play Coach – Find It

She enjoyed getting instruction from a teacher besides Mom. She is almost 2.
A chance to do something different and some guided learning; new ideas to try at home

Early Childhood Infant Workshops

An opportunity to explore new environments, materials, etc.. And an opportunity to interact with other children and adults
Experiencing new things
Exposure to many insects- real ones too!
Interaction with other children and adults
First time playing with bugs!
Fun to see her try things for the first time!
Got to play with and experiment with new things
He really enjoyed trying new things and exploring- i enjoyed watching him try new things and got some great ideas to incorporate at home.
He usually doesn't like new experiences, but this helped him get more comfortable.
Lots of fun-new activities we haven't tried at home
New sensory experiences
Opportunities to use common objects in different ways, ex: using scoops to find hidden objects in cornmeal
Sensory activities and play he hadn't tried before
She got to experience many things I maybe haven't thought of
She was able to try new things and experience and touch different things
Trying new sensory things

Early Childhood Family Workshops

A chance to try new food-related activities
Chance to feel what bugs feel like on your skin
Tried new things, enjoyed being with other children
We got to try a lot of new things, also gave us ideas of things to try at home

Appendix E, cont'd.

Family Science – Bugging Out

My daughter was very excited about the program. She was even brave enough to touch the insects.

Discovery Room

A lot of different activities to explore and learn for toddlers.
Children have lots of options to pursue their own interests.
Fun play we w/o too many rules. Multi-sensory discovery
Our 2 year old loved all of the new things to play with
She loves the chance to interact with objects we don't have in our homeschool classroom.
They got to experience new kinds of play.
We find out about new toys and enjoy playing together

Program activities

Play Coach – Bowling

Love ball rolling

Play Coach – Find It

Fun, interactive
Trying to find objects by shaking thing to make heavier objects rise to see what you can find

Early Childhood Infant Workshops

He got to play with sand for the first time and make a painting 😊
I really believe we got a lot out of the hands on activities. I like the tactile experiences and she did too.
Love the hands on activities and sensory experiences!
Loved the cornmeal!
Playing with different materials
Sensory experiences and new ideas for me to enhance our play at home
She loved the sticky wall and paints

Early Childhood Family Workshops

Enjoyed the art activities
Good sensory play for 2 year old

Family Science – Bugging Out

Hands on experience.

Family Science – Stomp Rockets

Ben was extremely happy to make his own rocket and watch it launch

Discovery Room

A great place to play with toys and equipment that stimulate learning
A lot of activity & interaction.
Ball, bells, stacking toys, car race
Both independent and interactive experience & lots of observation!
Car race
Chain, chain, chain, water table, safari table, musical bells
Discovering & playing with mulch/dinosaurs, water, marbles, teepees - cause & effect/ motor skill development.
Enjoy native american, sounds exp., and medical station.
Enjoyed being able to touch, build and play uninhibited. It provided opportunity to see what their greatest interests are. It is just super fun!
Enjoyed native american play area
Enjoyed role playing activities the most
[Child 1] loves hand bells and [child 2] played with everything today. Not just the racecars.
Great time exploring - new experiences learning new animals - hands on real life play (doctors)
Hands on experimenting - science in action
Hands on play with lots of different things
Hands-on activities broadens my childs curiosity about science.
He enjoyed the chance to play with a wide variety of toys.
He really enjoyed the activities . He like to build things. He also like to race, so the car activity really peaked his interest.
Imagination play and creativity/building
Lots of activities, makes learning science fun!
Lots of hands on fun for younger children
Lots of new sensory activities
Loved dr/ x-ray & teepee area
Loved the water table & race cars.

Appendix E, cont'd.

Loved playing with the doll house, raggedy ann, and the cars.
Loved the water table, and racing cars. Learning to explore new things on his own.
Loves the lunar table
My children love all the hands on activities in a classroom setting.
My children love playing & exploring all the different activities
My daughter and niece are very curious and love to learn with the activities at the science center & discoveryroom
Shadows, building blocks bells & music animal groups (safari animals)
She liked the train, dolls, and dollhouse.
She loved hunting for dino bones & playing doctor. We just had an appt. @ children's & she was acting it out 😊
She loved the marbles & water play
Sorting, stacking, play
The kids got the freedom to play & experiment in a developmentally appropriate way!
The tepea the medical center
They enjoyed free exploration. My daughter (6) enjoyed building and organizing animals. My youngest (1) liked balls, stacking, + noise making. Son (4) liked trains.
They experiment with many areas in a short time 😊
They liked the physician corner and the magnetiles
They're 2 so they pretty much just liked exploring!
To build their own t-pee
Varied activities
Wide variety of engaging toys/activities - encourage imaginative play for variety of ages

General

Play Coach – Find It

Fun, focused time
Fun and thinking
Fun

Family Science – Bugging Out

Learned a lot
Very interesting, fun

Family Science – Oobleck

Fun and knowledge
Fun afternoon.
He liked it. We have gone to all three programs.
GREAT!
Like it

Discovery Room

A lot of fun
A wonderful time
Entertainment, exploration
Free exploration and play
Fun
Fun and learning
Fun place to play
Got energy out
Great activities - they kept very busy trying everything out. They didn't want to leave! I loved all the play areas.
Many options for tiny kids. Not too crowded.
Mentor & physical stimulation
Play time
Playing, learning

Nothing

Discovery Room

He's 2
Our child is 6 yo and there was not enough here to keep her interested. Ticket lady recommended this for her.
Saw it as a place to play not learn

Appendix F: As a parent, what did you like most about this program?

Code Category	Code Definition
Program environment	General or specific mention of program logistics, style, and/or environment contributing to what participants liked the most.
Staff	General or specific mention of staff interaction with children or families.
Socialization	General or specific mention of children or families interacting with other children or families.
Interactive Exploration	General or specific mention of the physically interactive nature of the program; hands-on activities/materials are mentioned in this code.
Variety	General or specific mention of the program providing a variety (new, different, etc.) of activities/learning opportunities for its participants.
Specific activity/content	Specific mention of activities or content.
Takeaway	General or specific mention of ideas or physical items participants took away from the program.
General	General descriptions of enjoyment or learning without reference to content or experiences; general mentions of “activity” are included in this code. Only used when other codes do not apply.

Program environment

Play Coach – Bowling

Large and roomy

That it was going on during regular museum hours (accessible to all).

Play Coach – Magnets

Freedom to play/explore

Early Childhood Infant Workshops

Being able to touch and explore with the kids

Comfortable environment, very welcoming

Creative, hands-on

Kids playing w/ each other, name tags, variety

Positive environment

Set up of activities- able to stay at one activity for as long as you want!

The open welcoming atmosphere for kids

The structure of activities

Very age appropriate

We could browse around on our own

Early Childhood Family Workshops

Controlled environment; Activities pre-planned

Time frame # of activities

Family Science – Bugging Out

Child appropriate, hands on experience

Family Science – Stomp Rockets

Organized and had a variety of activities

Family Science – Oobleck

Free and conveniently located.

Discovery Room

Activities for younger kids

Age-appropriate hand-on

All of the options - age appropriate

Being able to let her explore without worry

Changes + UPDATES

Contained area with limited # of people. Really like new layout/setup.

Contained room w/ age appropriate activities.

Cost! Amount of choices, Diverse learning

Enclosed room with activities appropriate for little ones.

Free play in safe place to explore

Freedom, Exploration

Gives way to imagination

Great for her age - 2

Great for toddlers but not for a 6 yo.

Appendix F, cont'd.

I like that the children can associate science with Fun! They look forward to coming back to the room for them and it's for all ages - even the 19 month old could play!

I like that you updated/changed layout/ dinosaur area & space area

I like the reconfiguring you have done.

I liked that the kids are able to touch and play with everything. Nothing can be broken.

I love that you changed up / added to the room.

I love the new layout! I like watching him play by himself & figure out how things work.

It gives them the freedom to explore in a secure environment

It's child friendly

It's more toddler oriented

Kids allowed to explore at their own pace. And appropriate number of kids allowed in at a time.

Love that our children were able to be in a kid-friendly room! Able to explore the different activities.

My 2 kids at different ages (3 and 16 months) can play freely & independently in the warm & contained room!

My child was able to explore.

Not crowded - kids could move freely between activities - little wait time - variety

Not too crowded, lots of good hands-on activities and conversation starters

Open ended exploration. They were not told what to do with the materials. They were able to use them the way they wanted to.

Opportunity to play while learning in a secure environment.

Opportunity to get quality "play time" esp. When weather doesn't permit outdoor exploring

Safe environment w/ lots of hands on play

Safety. Lots of "hands on"

That the room wasn't crowded

The discovery room program connects with the mission of many pre-school programs.

The environment that allows kids to explore activities independently or with others

The limited # of persons

The open space yet enclosed & safe.

The play areas are setup for child-directed play and exploration. It's great that they get to show me what they found, instead of vice versa.

The rest of SLSC lacks activities that 4 year olds can reach and see. This is the only area my kids feel welcome and comfortable and engaged.

We came here to find gift ideas + try them out! Love the contained area - the reason we are members!

Staff

Play Coach – Bowling

Teacher was great and it used recycled items from home

Play Coach – Find It

Caring interaction of instructor

I loved the human interaction with a knowledgeable, kind person

Play coach! Very kind. Full of great lessons and info.

Positive reinforcement of kids ideas

Play Coach – Jars & Lids

It is nice having other adults (besides me) for my child to interact with and learn from

Early Childhood Infant Workshops

Interaction with the staff/presenters and my child

It's well-run and the leaders of the group are very nice

The activities and instructor

The great teacher, very positives

The instructors are awesome, very positive and very interactive with all the children

Very nice moderators. Cool activities.

Early Childhood Family Workshops

It was very interactive, and offered the kids a lot of opportunities to participate. Amy was a very enthusiastic facilitator. She was great!

Appendix F, cont'd.

Family Science – Stomp Rockets

Good explanation! Hands on activity.
The hostess was well spoken and great with kids

Family Science – Oobleck

The instructor was very involved and engaging

Socialization

Early Childhood Infant Workshops

Interactions with materials and other kids
We had fun together

Early Childhood Family Workshops

Time together learning

Discovery Room

Quality time with my child
He shared with other children and had time to
try multiple activities.

Interactive exploration

Play Coach – Bowling

The kids were moving, thinking and counting

Early Childhood Infant Workshops

Children can touch real flowers, sand etc.
Hands on
Hands on opportunities
Hands on, very engaging, a lot to do! Laidback
How interactive it was
It is very hands-on and the kids loved it!
Love the interaction and freedom to explore,
Penny is awesome!
That its hands on and workers are great

Early Childhood Family Workshops

Everything- very interactive, engaging and fun
loved doing activity w/ pipettes and mentos!
Hands on exploration
The hands-on experience and the ease of the
activities

Family Science – Bugging Out

Kids involvement was great. Like touching the
bugs
Science of bugs - physiology hands on
The learning experience with hands on activity.

Family Science – Stomp Rockets

Hands on experience.

Family Science – Oobleck

Hands on slime
Hands on experience.
Experiments

Discovery Room

All of the interaction they get with the different
exhibits
Hands on
Hands on & good for toddlers
Hands on activities [2]
Hands on activities - so many
Hands on activity
Hands on controlled
Hands on exploration, age appropriate
Hands-on
I like the hands on colorful, interactive, nature of
the stations
I like the hands on areas - kids love to touch, and
they were so many great things to do. The
medical area was great along w/ the
insects/animals.
I love that it's hands on. Great sensory activity
for kids esp. Kids w/ autism.
Interaction with others all hands on stuff
That it was a great hands on time for my
granddaughter
The hands on activities for the smaller children
The interactive/ non-electronic, exploration toys

Variety

Play Coach – Bowling

Numerous points of learning/choices (ie: what to
set up, where to set up, how to set up, what to
bowl with, how many did you knock down).

Play Coach – Find It

Different ideas. A bit of hands on interaction.
I love offering kids new learning experiences.

Early Childhood Infant Workshops

Big variety of activities
Exposing my child to different things
I liked all of the activities and the exploration.

Appendix F, cont'd.

Lots of activity choices
Lots of different activities
Many activities
Several activities for my child to explore
The different activities offered
The different activity tables
The new activities I hadn't tried
The variety
The variety of activities and the friendliness of the staff.
The variety of activities, overhead projector, large magnifier, shredded grass pool, real grass- so many activities, so many ways to experience bugs!
The variety of stations

Early Childhood Family Workshops

Different ways to engage with my child
Learning more science activities
Lots of different activities, learning, and fun
Range of experiments
The children exploring new things and idea

Family Science – Bugging Out

Getting the kids involved in multiple activities

Discovery Room

Cool toys we don't have at home
Different activities
I like that the kids are able to wone hands on and that there was something that interested each child.
Limited # of kids, variety of activities
Lots of activities
Lots of activities for younger and older children
Lots of activities, things they don't usually get to try - the tipi, the crutches/wheelchairs
Lots of different experiences
Lots of places for them to explore
Lots of pretend play activities
Lots of things to see and do
Lots of toys. Teaching inside playing
Lots of variety
Loved the variety of activities
Many different activities
Many toys that are unique
Not sure. I like the variety

So many different activities
Something for everyone
The variety of activities
The variety of activities. I love that my children can experience everything from microscopes to magnets.
The variety of discovery items
The variety of stations for exploration is so great!
The variety of the activities - very intriguing and fun
The wide variety of play to explore learning, fun activities
There was a lot for my toddler to do
Things that you don't learn elsewhere
Variety [2]
Variety of activities
Variety of activities appropriate for varying age groups
Variety of activities geared towards younger kids, not interrupted by intrusive older kids
Variety of things to do
Variety, educational activities
Wide variety of engaging toys/activities - encourage imaginative play for variety of ages

Specific activity/content

Play Coach – Bowling

Recycling materials to use for play

Play Coach – Find It

Home based ideas to develop creativity
That you can find different objects

Play Coach – Magnets

That it is educational (science and math)

Early Childhood Infant Workshops

Cornmeal box
Exploratory ideas for all his senses- i will reuse many of these ideas
Painting
Seeing bugs
The activities of art were so creative
The different senses I wouldn't think to show him

Appendix F, cont'd.

Early Childhood Family Workshops

Loved the trip to the Gadget Cafe, she also loved cutting the fruit
The station

Family Science – Bugging Out

A lot I didn't know about insects. I have learned today.
Arts and craft.
I really enjoyed the presentation, the activity afterward was great too.
Seeing insects up close that you would never get to see up close.

Family Science – Oobleck

Molecule

Discovery Room

I enjoyed the Native American playtime!
Med center
My kids love the water table and pretend play and fish!
They love the role playing & I love them loving it.

Takeaway

Play Coach – Find It

Great idea to try at home

Play Coach – Jars & Lids

I learned about an inexpensive way to teach matching and finding objects

Early Childhood Infant Workshops

The new ideas for play at home
The new ideas to take home

Early Childhood Family Workshops

Caterpillar to take home
New ideas to play at home
New ideas we can try at home

Family Science – Stomp Rockets

Kids got to learn and have a simple but fun toy to take home. Alka Seltzer? Who would have thought!

General

Play Coach – Bowling

Teaching kids
The girls stayed in the room quite a bit longer and were more engaged in the play.

Play Coach – Find It

Fun activity
It was interesting and educational
Educational things
Learning

Play Coach – Jars & Lids

All of it

Early Childhood Infant Workshops

Great experience
It was very much a learning experience with her.
The activities
The activities. We've been to workshops previously with our son.

Early Childhood Family Workshops

All of the activities

Family Science – Bugging Out

Information
Interesting for kids
The program was very informative.

Family Science – Stomp Rockets

Fun learning
Kids loved it and learned something.

Family Science – Oobleck

Fun
GREAT PROGRAMS!!!

Discovery Room

Fun
Fun activities!
Kids are engaged
The program gives my son something constructive to do besides sit at home and play video games. It's also educational.

Appendix G: As a parent, what did you like least about this program?

Code Category	Code Definition
Nothing	General or specific indication that there was nothing participants did not like about the program.
Adult considerations	General or specific mention of a lack of amenities for adults or issues for adults in the program.
Child considerations	General or specific comment on issues for child participants in the program; does not include program specific comments, but does include comments on age appropriateness.
Other participants	General or specific mention of disliking other program participant behavior in the program.
Institutional logistics	General or specific mention of disliking a logistical issue related to the institution and not the program.
Program specific	Comments on issues specific to the individual programs.
More offerings/time	General or specific mention of needing more time during the program or more program offerings.

Nothing

Play Coach – Bowling

No complaint

Play Coach – Find It

Nada!

Nothing [3]

Play Coach – Jars & Lids

Nothing

N/A

Early Childhood Infant Workshops

Great class.

I loved it!

Nothing [2]

N/A

Early Childhood Family Workshops

Everything was great

Nothing

Nothing per se.

Family Science – Bugging Out

Everything was great.

It was great.

Nothing- All was good

Nothing Everything was interesting.

The program was great.

None

Nothing [2]

N/A [2]

Family Science – Stomp Rockets

Nothing [3]

Nothing - it was easy, fun, quick

N/A

Family Science – Oobleck

Nothing

None

Discovery Room

0 [2]

Fun

I had no negative reactions

It's geared mainly towards small children

None [2]

None!

Nothing [9]

Nothing - all was great!

Nothing - liked it all

Nothing - Well done!

Nothing I can think of

Nothing! The room and staff are great!

N/A [10]

Appendix G, cont'd.

Adult considerations

Play Coach – Bowling

Adult seating

Play Coach – Find It

Doing the survey while chasing a two year old

Discovery Room

More areas for adults to sit

No place to sit and chat or drink coffee!

Child considerations

Early Childhood Infant Workshops

[Child] doesn't like to be dirty! 😊

Couldn't do pudding because of dairy allergy

I would like to see more opportunities for the children to interact with each other

Early Childhood Family Workshops

The noise of Gadget Cafe was too much for 2 year old

Family Science – Stomp Rockets

Small age group, only 4-6 year olds.

Discovery Room

A little young for 5 year old

It was difficult at times having the older and younger children together.

Kids are not able to get hurt.

More in older 10+

My son is 6 years old and I think there could have been a little more activities for him to play with that pertained to his age group.

Other participants

Discovery Room

A field trip came in and it got loud and crowded.

Other parents don't always supervise children, the water table isn't always shared well

Pushy, unsupervised children

Some children being destructive, and no one stopped them

Some parents didn't pay attention to what their kids are doing

When older kids are too bit & strong for little ones

Institutional logistics

Early Childhood Infant Workshops

Difficult to find once inside!

Early Childhood Family Workshops

I liked it all. The second area made it hard to hear.

Discovery Room

Could use a little more space - plenty to do, just more space to spread out.

Did not open on time

Hard to get a ticket on busier days

Hard to get tickets

It's noisy, but may be for me, not for the children

It's pretty noisy.

Limited open hours - we can come in the afternoon

Limited time frame to stay

No bathroom close by

Pay only. Limited time. Set schedule

STL science center/ discovery needs more help specially with the number of children asking questions

Would like to decrease the max number of tickets.

Program specific

Early Childhood Infant Workshops

Field trip to wall art

Maybe we may had more group activities

Messy!

No music playing while they were playing

The paint

Early Childhood Family Workshops

Need one or two more stations

Walk to other location for short color demo

We ran out of things to do before time ended

Family Science – Oobleck

Book too long

Missing pages of the story

Story was way too long.

Appendix G, cont'd.

Discovery Room

Dollhouse (she's a girl)
Not as much paper/pencil coloring, art work potential as usual
Not enough animals to look at
Small marbles (but we supervised her and she liked them)
So much hard to keep focused
The drum
The live cockroaches. 😊
They wanted to play animal toys more than "science activities"
Train table
We visit the Discovery Room often & there are no new stations.

More offerings/time

Early Childhood Infant Workshops

Could've been longer
I think I would like it to be longer
I wish it were longer! 😊

Program was slightly too brief
The class could be longer (15 min?) And have a few more songs or books
The field trip- kind of "rushed" the other activities

Early Childhood Family Workshops

There's nothing I disliked... Maybe a little more time w/ scientist

Family Science – Oobleck

Do more programs
Only had 3 Saturdays to do it.

Discovery Room

I wish we could have more time.
Time flies by
Wish we had more time in here

Appendix H: How could we make the program better?

Code Category	Code Definition
None	Positive or general mention that the program does not need an improvement. Also includes comments mentioning uncertainty.
Institutional logistics	General or specific improvement comment intended for the institution, not content or activities in the program.
Information for parents	Specific comment to include information for parents, before, after, or during the program.
More offerings/time	General or specific comment on needing more time during the program, or having more program offerings.
Program specific	Improvement comments relevant to specific programs only.

None

Play Coach – Bowling

Don't know if he realized it was science related. To him it was ball racing.

Play Coach – Find It

Friendly
Not sure
She was great and helpful

Play Coach – Jars & Lids

Did great!
None

Early Childhood Infant Workshops

First time experience- loved it
Great already
Great workshop
It's awesome.
It's great as it is!! 😊
Lynne is great!
This was our first, so I don't have a consistent experience to answer right now
? It was really great!
?

Early Childhood Family Workshops

No suggestions

Family Science – Bugging Out

Good as it is
The instructors did a wonderful job.
N/A

Family Science – Oobleck

It is perfect as-is
It is great!

Discovery Room

??? It was wonderful
Fun
I like it as is
Like it just the way it is.
Loved it! Its great
Perfect
Wow! Already great
N/A [2]
Not sure [3]
Nothing [2]
Nothing! It's great
?
0

Institutional logistics

Early Childhood Infant Workshops

Maybe do a smaller monthly fee

Discovery Room

A 9am slot? Booking tickets online?
A bigger room
A water fountain [2]
Bathroom inside
Bigger and free (we are members, so I'm speaking for others)
Closer rest room! 😊
Expand

Appendix H, cont'd.

Expand it
Expanding it for more kids and activities.
Have ticket sales recommend for toddlers but not older kids.
I think under 4 a child should be free with the purchase of an adult and if the # of adults is higher than the kids the extra adults should not have to pay.
Online ticket purchases
Put hand sanitizer dispensers or sinks w/ soap in the room.
Seriously, some parents think this is babysitting. Throw them out if they let their kids misbehave and don't do anything about it.
Sound proofing?
The Discovery room is the best part of science center. The rest of center needs a lot of work and updating.
To reduce the noise

Information for parents

Early Childhood Infant Workshops
Better instruction on how to find location within COSI
Give notice in advance if we are going to participate in messy activities

Early Childhood Family Workshops
Have more info to parents why these activities are important.

Discovery Room
Maybe some guide cards for the Dominos area and marble/mousetrap areas - just to provide some basic building ideas.
Possibly more documentation - (e.g. information about what you're looking at in the microscope.

More offerings/time

Play Coach – Bowling
More of it!

Play Coach – Find It
More hours! More days/week! Great program!

Early Childhood Infant Workshops
Longer amount of time ☺
Make it longer!
Maybe 30 min. \$6 workshops more often
See above question [the class could be longer (15 min?) And have a few more songs or books]
Think it was perfect. "maybe" 20 minutes longer

Family Science – Bugging Out
More events like this
More programs at the local library.

Family Science – Stomp Rockets
Come more often.
Doing regular sessions.
More classes or events.
More Programs
More weekends offered.

Family Science – Oobleck
Do more!
Have it maybe once a month, EVERY month.
More programs

Discovery Room
Longer time for families
More working hours!
Unlimited time to stay

Program specific

Play Coach – Bowling
A bit more science while they play

Play Coach – Find It
Maybe actively search for participants
Putter bigger objects in the jar

Play Coach – Jars & Lids
More activities

Early Childhood Infant Workshops
Maybe some songs
No music playing while they were playing
Perhaps more open play at end for those children up for it

Appendix H, cont'd.

Early Childhood Family Workshops

1. Do the color water experiment with all primary colors. 2. Tailor to a smaller age range (e.g. 3-4)
- 1-2 more activities
Continue the "field trip" component
Keep it in separate room
Liked the change in rooms! 😊
Put field trip closer. Let kids work with more colors

Family Science – Bugging Out

- Bring more different bugs.
Getting everyone involved.
More BUGS!
More volunteers to help.

Discovery Room

- A little more explanation on what things are, like at the microscope area, etc.
A show of some sort
Add a new station every month or so.
Add activities for older kids
Adding something the kids will be able to take home with them.
Consider having rotating exhibitions
Continue to smile and reinforce science activity engagements.
Could use some early childhood computer/ smart board activities to encourage technology.

- Have staff do science demonstration geared toward younger crowd.
I really don't know - maybe an activity sheet to take home for some areas within the room? Eg. A space exploration sheet
Keep changing + rotate some more
Keep changing/ updating the activities
Live animals?
Make 2 of them to accommodate busy days
Maybe a temporary activity that changes monthly for us repeat members
Maybe add an activity that staff leads w/ willing children
Maybe offer group activities led by the staff.
Story reading or activity during wait time.
Maybe some little mammals
Maybe some music?
More activities for older kids would be nice.
More live animals, better water area
More musical instruments
More trains on the train table so more kids can play at once. It's a very popular play area!
Put more interesting things on the blank walls
We are thinking of buying a membership - it would be great to see some variety/change/rotation in the room.
Would like to see some structured activities.

Appendix I: Staff Feedback

What Worked Well

COSI

Open explorational art activities; children could interact with each other freely; children loved the hands-on sensory experiences

Open exploration of activities, especially collaborative painting, sewing table, and overhead; Closing activity: pendulum painting
Program went really well. The babies loved the open exploration of cold and snowy items. They especially liked the frozen liquid watercolors and picking up styrofoam snowballs.

Snow bin was great. Frozen water color was also a lot of fun. Singing songs!

Snow in bins -Songs and story in circle time - Snowballs (styrofoam balls), buckets and ramps -ice in bin

Ice cream -Instructions and info printed and placed by activity

Clay with sticks and shells Tree cookies to play/stack

Nice watercolor paper for paint because it was Mother's Day; Field trip outside

Painting; boxes and buckets; real food; field trip; talking about babies and science

Overhead; Field trip with objects; Contact paper attached to the wall; Paint; Song at the end

Families loved the real bugs; songs

Everything! Meet the Scientist Songs-dances

Activities! Very high quality, engaging, both children and adults loved them. The picnic was also a hit.

All activities

ICM

Combined both jars and lids, find it and crazy containers. Kept some kids interest for up to 20 minutes

Having the "Find It" containers on display to attract attention. The kids and parents loved the concept of the game- kids because it's fun; parents because it can be recreated easily.

The open space and variety of containers. Having more cups this time.

I trained [coworker] today so we used two programs (Jars and Lids and Find it!). Worked well because we were both busy from 10:30 - 11:45 a.m. working with several families.

Kids loved the Find it toy and crazy containers. They love looking for the gold ring and finding out how to make their own toy.

I made new bowling balls by doubling up the dish towels. I also set up at the top of the ramp next to the family restrooms. I was visible right as they came into the lodge. Once I got one family involved, I usually had a flood of families or kids all at once!

I walked in the door and had 5 kids start the bowling program right away. There were many school aged kids today (more than usual). The lodge was very busy between 1 - 2:30. I also set up two lanes in different locations so two kids could play at once.

It worked well to do bubbles on the roof on such a nice day.

Sorting buttons for kids who were older worked well. Sorting big and small for toddlers went well.

The fishing aspect intrigued a lot of kids to join in once they saw another kid doing it. The parents who came over seemed to find the program entertaining as well. The fishing allowed for lots of extensions i.e. counting and colors at a younger age, explaining magnetism, magnet strength...

The cart attracted parents to the area/game.

Having multiple activities out at one time

Busy day at ICM. More kids than usual since its Spring Break so we were very busy!

MODS

The children and their parents really enjoyed making their rockets. We had a hard time getting them to stop so we could pack up.

The hands on activity went very well and the children really liked meeting the live bugs.

Appendix I, cont'd.

They loved all of the chemistry experiments we did. Getting messy was definitely a plus for them.

The participants were very eager to participate in anything we were going to do with them. They really loved all of the activities

SLSC

Variety of activities [2]

With only nine guests present in the room, all the children were able to explore all the activities within the room.

Space to play

The toddler area

Almost all of the guests used every section of the room.

The interaction between children and adults.

Parents interacted with their children.

Parents were interactive with their children.

Parents/adults were interacting with their children.

Good parental interaction

Adults played with their kids.

Time limit on session

What was Less Effective

COSI

The story I read in the beginning was a little long for short attention spans.

Field trip was challenging because cosi was very busy, hard to contain my group within the crowds of cosi

Field trip was supposed to be outside, but it poured rain, so we looked at the moth sculptures

Field trip- so far, not sure the experience was worth the trip; open art studio- was not used; observational drawing- not used; photography- logistically hard; clean-up- rough

Meet the scientist field trip because it was so hard to hear in the gadgets cafe and the activities did not work well for younger children, although the older kids (3-5 yrs) loved them. The program was rushed, not enough time.

Meet the scientist: facilitator wasn't appropriate for young children confusion over a family not registered not very many children

Bucket the turtle- surprisingly the children were not interested

Play doh -beginning circle because families come in so staggered

Playing with dough was not as fun for kids when there was snow across the room.

Clay with tools; people were late

Maybe the painting with sea sponges

Overhead

Tapioca- one child allergic to milk

Family was late- messes up the schedule

ICM

It attracted a lot of kids who wanted to participate and more kept joining in. The concept was easy and quick to explain to those joining in but next time I would bring more supplies for more to participate at the same time.

Bowling can be fun but distracting when the kids get excited and start throwing the balls and pins and not waiting their turn. We practiced taking turns in some cases but often a toddler would wander over to me without their parent and take the pins or balls away or knock down another kids pins. Also, the cars don't really work well to knock down the pins. They would spin sideways off the path and were difficult to knock down the pins.

The kids got carried away with the bouncy balls and wanted to throw them around the lodge so I put them away and only used the dish towel bowling balls

I only had one container of bubble solution which made it more difficult when there were lots of kids at one time.

Sometimes the object list is a great way to keep kids hooked on the game and can make it a race if multiple kids are participating. Today the list wasn't something kids were using (a lot of younger ages) so maybe having a picture list to mark off what they find.

One family did not like the vitamin container because it resembled a prescription/pill container. I would not use it next time.

Appendix I, cont'd.

Some of the parents forced their children to participate in the activity which made it less appealing to the children and lowered involvement.

Slow day at the museum; I changed locations in order to better attract people. This activity needs a lot of space so it can limit choices for location.

Not very many participants today. I had 17 total. Many people were more interested in the ball tracks than the big and small or button sorting game. The kids wanted to combine the spatula and button game to carry around the museum so it got a bit hectic for part of the time.

It was not busy today. I had 11 people total I also had all kids approach the cart but parents moved to the back or corners of the lodge and did not want to be involved.

All went well today!

None [2]

MODS

Alka Seltzer and water activity was very messy and didn't really work very well at all.

Identifying bug body parts. Some of the children lost interest very quickly.

The book we read was way too long for this audience.

The kids had difficulty following directions and the some of the parents had a lot of children with them and it made it difficult for them to work with each of their kids. We had to run around a lot to give all of the kids the attention they were wanting.

SLSC

The clean up process could have been better. I know adults heard me but were not very active.

There was a mix of guests and a school group. I think the parents were annoyed that the school group took over the room.

There were two older children and there were slightly pushy and were not gently.

N/A [3]

None [7]

What Staff can do Differently

COSI

Add more gross motor.

Add music

Pick a shorter story!

Make the playdoh more inviting and interesting

Having hands-on art pieces at the field trip was great for the kids, i would bring more items for them to hold to deepen their experience

Put 2 mats by the pendulum to protect the floor; lower tables for clay and observational drawings; think about how to better manage logistics of photography; put watercolor paint and pastels on a low table; give more space and attention to the overhead projector

Need white paper on the wall for overhead

Live bugs on overhead projector

Give adults info on the value of clay

More printed info with experiments

Give 10 minute warning before field trip- 5 minutes was not enough

Consider logistics and operations more thoroughly before facilitating. Everything worked out fine, but it could have been a bit smoother with more planning ahead on my part!

Carefully check who is registered

ICM

Bring pictures of bowling and create "bowling place mats" where kids can easily line up the cups. This would also allow for multiple kids to join in and keep focus.

Take out the bouncy balls and add another larger softer type ball.

No cars and no foil balls (too hard and dangerous when kids start throwing in the air)

Egg cartons to sort buttons by color and have kids use the small purple clothes pins

I would probably split the solution into 2 containers so that more kids could play at the same time. I would also come up with more items to use for homemade wands.

I would take out the pill containers for the next time I taught Jars and Lids

Try play coach during the day during field trips are still at the Museum.

Appendix I, cont'd.

Have more "Find-It" containers. There are four but only two are really usable by the younger children because of the amount of rice in each container.

Possibly have a list of the objects that can be found in the different "find it" jars. Kids like to have a challenge: "Can you find a..."

Possibly having containers for the kids to make and take would attract more people to the activity. Almost all adults comment on how they love the idea and want to do it at home.

Once the kids "caught" the fish they weren't sure where to put the fish so next time I would bring a "fish bucket" or something for them to put their fish in and count.

Some families were familiar and had done the find it games so we may need to try some new programs altogether

None

MODS

Make sure I have a lot of extra supplies. The kids wanted to do the activity over and over again.

We had enough but I was worried we would possibly run out because they were going through so much.

Omit the Alka Seltzer activity altogether.

Read a different book about chemistry. One that is much shorter.

Spend a little less time on the bug body parts.

SLSC

Rotate activities offered

Have the teachers beforehand tell their students that they are sharing the room with other children.

Monitor the older children more closely.

Speak louder during clean up time.

Clocks were out of sync; extra time allotted at the end

N/A [3]

None [4]

Appendix J: ELC Educators Workshop Responses

Please describe what you got out of this program.

Code Category	Code Definition
Instructional related	General or specific mention of content presented by the speakers or information related to early childhood programming.
Ideas/activities	General or specific mention of the program or activity ideas shared.
Networking	General or specific mention of networking with colleagues.
Institutional comparisons	General or specific mention of comparing their institution's programs or involvement with others.
General	Comments that commented on the general atmosphere.

Instructional related

How simply it is to incorporate science into your educational plans for even a 3 year old.
The verbage of how to talk with preschoolers about science, hands-on activities to use.

Ideas/activities

I got a few ideas I'll think about implementing. For example, the Bee-Bots seem really cool and seem to have a lot of programming potential; also, the eggs-prize activities. Specific activities for preschoolers. Outreach programs as revenue generators. Interesting activities and great connections. A combination of new ideas and reinforcement of the value (and fun) of being an educator of early learners. It is essential to "tune in" to your audience with communication, "stage/plan" activities and engage in interaction. Some good ideas, resources, and meeting others in the field.

Networking

Contacts in other musuems, activities and ideas to implement at home musuem, chances to expand programs and services at home museum, the handouts and activities from other musuems were much appreciated. Networking opportunities, program ideas to consider to enhance pre-k opportunities, museum exhibit spaces geared to early learners. Networking and Ideas for new programming.

Networking with other professionals to share ideas; great lesson plans

Institutional comparisons

I liked hearing about other people who are doing similar things in other parts of the country, and other types of preschool programming. One of the biggest things I got out of the workshop was seeing how we compare with other museums in the the programming and types of activities we are providing to our visitors. It was great to hear what types of programs and activities other institutions use for this age range. I felt inspired to move forward with my own program development. I love having the opportunity to talk with other educators and seeing what kind of activities they do with the little ones. I haven't worked in a children's museum long, and we are the only children's museum in our town, so it was really nice to meet other people in the field and compare their experiences with my own.

General

I really enjoyed the enthusiasm that people had about preschool programming. I love the opportunity to gather with others who share vision and passion to make a difference. It was enjoyable to be with peers but I work at an art museum so it has limited application to what I am able to do inside the museum.

Appendix J, cont'd.

What was the most useful aspect of this workshop?

Code Category	Code Definition
Seeing examples	General or specific mention of participants finding the visual context of activities or ideas most useful.
Sharing ideas/examples	General or specific mention of items or ideas shared.
Networking	General or specific mention of networking with colleagues.
Presented content	General or specific mention to content delivered.

Seeing examples

Seeing the St. Louis Discovery Room and how it was set up.
 The resources people provided and seeing the examples.
 I did come home wanting to change our "discovery room".

The most useful aspect of the workshop for me was networking and getting confirmation that we here @ the Omaha Children's Museum are on the right track with early childhood programming that we do here at the museum.
 Meeting new bright people in the field

Sharing ideas/examples

The sharing
 Learning new ideas.
 Networking--sharing ideas is ALWAYS so helpful!
 Lesson guides
 The lesson plans everyone provided were great - I came away with some ready-to-use ideas. I also loved exploring the Discovery Room and took a million pictures to inspire us in our toddler room!
 Sharing with peers and the presentation format was casual yet effective.

Presented content

For me, I thought the presentation on the eggs-prize was the most useful. I'm familiar with the various x-prizes and am excited to find their are materials available to do related projects with kids. I look forward to trying this out with a class or during summer camp. However, it would be with older-aged kids, not pre-K.
 It was useful to have exposure to diversity in experiences and perspectives in one room. I enjoyed the information regarding language and learning - we often do things without breaking down the "how" and "what" is happening.
 I enjoyed hearing from the Head Start teacher about how she felt museum staff could better prepare teachers for field trips. As well as hearing about the things she did with her students to prepare them for the field trip.

Networking

Meeting other educators around the country.
 Networking and getting contacts within the industry.
 The opportunity to meet others in the field to collaborate with!
 Making contacts and sharing activities
 Talking one-on-one to other participants who come from similar institutions was very useful.

Appendix J, cont'd.

What did you like least about the overall workshop?

Code Category	Code Definition
More time	General or specific mention of needing more time to explore the museum, share ideas, etc.
Program organization	General or specific mention of how the workshop was organized or particular aspects of the workshop.
Facilities	General or specific mention of disliking the space where the workshop was held.
Nothing	General or specific mention that there was nothing they did not like about the workshop.

More time

Not enough museum exploration time.

Not enough time for networking. Needed more time to meet.

I wish there had been more time to get to talk to people from other museums. I loved sitting with some different people at lunch and comparing our experiences. I got some great ideas from this casual exchange. I also wish we'd had a bit more time to explore the science center, but maybe that was because I took too long eating lunch!

Would have liked to explore the museum more - not enough time to do so.

Wish there was more time to meet everyone and share ideas

I wish it would have been longer. Perhaps a two day session with more time allotment for activities.

Program organization

Most of the material presented seemed as though it could have just as easily been presented online. I would have enjoyed more time to look at the exhibits on display at the St. Louis Science Center.

The lack of organization. It was unclear what the intent and purpose of the conference was. No one was sure what they were supposed to speak about, or bring, or how it was going to be shared.

There needs to be a better explanation of what people need to bring to the workshop. I thought we needed to bring example activities or experiments and other people just discussed what they do at their museums. I really like doing the activities. Maybe next time you can do stations and have people freely walk around table to table. This will give them the opportunity to try the activities and asked questions.

It felt like there was no idea what people were supposed to do.

I think many of us had different expectations on what we would gain from attending.

The X Prize session, though generally interesting, did not seem to contribute any useful information for preschool science education. It would have been great to hear from another professional who works directly with this age group.

Room

The room was somewhat cramped
The room. poor sound, and lighting
No windows in the meeting room.

Nothing

Tough one. That I had to leave a bit early.
N/A [2]

Appendix J, cont'd.

What was your favorite activity or idea that was shared?

Bee bots and discovery room
Beebots, Xfactor propulsion, paint and oil activity
The Bee Bots.
The bee bots. Our focus is on STEM so this activity is perfect.
The Bee-Bot and energy stick were great. But my favorite idea that I see applying to our setting was the pendulum.
The Bee-Bots and the Eggs-Prize seemed the most promising to me (but mostly for older kids). (But I work mostly with older kids, FYI).
The beebots and the teacher from head start.
I was very excited to learn about the "Seeing Stars" kit. I am currently developing a planetarium program for Early Learners and I have been searching for a simple, low-tech activity to show constellations. I am eager to adapt this kit to my program.

The X Prize speaker
Preschool Pals--for members only, includes a special program, story time and activity. Limit to number that can attend.
My favorite idea was hearing about how the St. Louis science center incorporates preschool learning not only in the discovery space, but throughout the museum by way of book nooks and preschool programming.
Science activities for the early learners gallery
The flubber
The ice cube / string activity.
The magic wand thingy. Great as an activity and also an option for our musuem gift shop.
The oil and tempera paint activity was my favorite. I'm using in a program this week. Too many too pick just one! There were a lot of great ideas that I look forward to using!
Bubble paint

How could we improve the workshop?

Be more clear/specific in "pre-workshop" notes as to the goal for sharing, what specifically to bring to share, facilitators more diligent in keeping people limited to allotted time.
Provide clearer directions before the workshop.
Give each team the same amount of time to present their lesson.
Better organization with clear goals and instructions. Provide participants with examples of developmentally correct science methods and activities from leaders in early childhood. People with experience in early childhood science instruction as speakers would have been great.
Have more examples of activities used on the museum floor also include some performance / theatre / presentation training for museum professionals who want to incorporate this into their floor.

It seemed like the people that got the most out of the workshop were the people that were trying to develop new programming. If there was a mini question and answer session with experienced institutions. The participants could be broken up into two groups. One group would set-up the activity they have to share and allow the other group to explore for 30 minutes. They would have the option of focusing on some activities that were new to them. Then they could switch.
For each workshop I would pick one aspect to focus on. Activities, public programming, school programming, school field trips... Also, maybe for when the focus is on school field trips having more teachers who can share their input.
I want more time trying the activities people talked about and have an opportunity to ask them questions.

Appendix J, cont'd.

Hearing from each institution was a wonderful way to get a sense for what other museums are doing, but it would be great to have some opportunities for smaller, break-out groups to discuss topics more specifically.

Built-in time to talk freely, maybe with some prompts. A chance to mingle more with people at other tables.

More time for sharing activities and ideas felt a little rushed

Longer

Make it 2 days.

Maybe they could be held during the fall. ??? I liked the conversational, interactive format. Conversations with other educators is always valuable. Lunch - my turkey wrap was not good. :(Realize there are limitations, however we have box lunch providers where individuals fill out a sheet with choices and their individualized box lunch is delivered. :)

I enjoyed seeing the hands-on area for toddlers, but would also have enjoyed seeing more of the St. Louis Science Center exhibits, as I work a lot with older kids as well.

Not sure i have any suggestions. Very well run and everything was relevant. Great job

Appendix K: Year One Partners' Evaluation Responses

What knowledge and/or skills have you and/or your program staff gained by participating in the Early Learners Collaborative?

I have learned a lot from the other institutions and the programs that they are running. It has been great during our phone meetings to see what everyone else is doing and to be able to take what they have learned from their programs and make small changes to mine that have made them better. For example, I am asking the parents and children more open ended questions to encourage higher order thinking. That came from one of our other institutions and the programming they are doing.

We have gained the opportunity to collaborate with other institutions and share ideas across our field nationally and internationally, both learning from our colleagues and offering ideas to them as well. We've also gained the opportunity to do some focused evaluation and gain helpful feedback on our programs.

The Early Learners Collaborative has given us the opportunity to experiment with and expand our Play Coach program. We are currently developing some new layers to Play Coach that we think will increase participation in the Museum and the ability of caregivers to continue using the activities they learn here at home. It has also been valuable to talk with other early childhood science program managers quarterly and hear what is going on at their institutions. The readings and discussions have helped me, as someone who is somewhat new to the Museum field, gain a broader perspective of science education for this age group.

We gathered several great ideas from the workshop at the Science Center.

How has participating in the collaborative affected your institution?

As a participant in the collaborative, we have been able to share that with others, specifically when applying for other grants/funding. We are waiting to hear on those applications, but are hopeful.

Participating in the collaborative has allowed COSI to connect with and share ideas with other institutions that have similar audiences and strategic goals.

We are more focused on doing these programs in the areas that need them most. We have streamlined the communication between our institution and the Libraries and I am now in close contact with the Regional Programs Director. This has made the process of organizing the programs in each individual library much more efficient.

Programmatically, it has improved our Play Coach Program, and indirectly our Me & My Shadow preschool program by providing us with new ideas for early learners. The national recognition of being a first year participant has also helped us increase our funding through other venues, as well as added to our reputation as a leader in our field.

How did participating in the Early Learners Collaborative affect your thinking about early childhood learning in general / your program specifically?

I have appreciated hearing the variety of activity ideas for children of all ages and their caregivers. I have been able to implement some of the ideas from ELC colleagues.

Participating in the collaborative has reminded me of the importance of evaluation and of the importance of collaboration. We are now pursuing additional methods of both evaluating our programs and collaborating in our work both locally and nationally.

Appendix K, cont'd.

In our meetings we talked about how much these children are capable of at such a young age. We did chemistry with them and talked about molecules, we built rockets and talked about propulsion and we talked about the characteristics of arthropods. As long as you keep things on a very basic level you can give them a foundation on some pretty complicated subjects, thus making them more likely to have the confidence to believe science isn't so hard and scary.

Initially, it challenged me to think about Play Coach more concretely so that I could articulate it to people who had not witnessed it. This helped our program because it eventually gave it a framework and then a springboard we could use to improve it. In general, it was really helpful for me to read and hear about how to teach seemingly complex scientific ideas to young children. It gave me a broader context to think about how I teach and how I train others to teach this age group.

What modifications to your program have you made as a result of information shared through the collaborative?

I have appreciated hearing the variety of activity ideas for children of all ages and their caregivers. I have been able to implement some of the ideas from ELC colleagues.

I have changed how I question participants. By asking more open ended questions the children and their parents are thinking and working together to come up with answers to how and why things are happening.

We have made small modifications as a result of the program evaluations and feedback from our audience. For example, one parent suggested we play music while children are exploring our hands-on stations, so now we do that! Another parent indicated that she wanted more information about the value and rationale of the activities, so we are working on ways to incorporate that in the future.

Our modifications have mostly come from the feedback we got using the surveys from the collaborative. Additionally, the funding from the collaborative gave us the staff time to run Play Coach regularly, and through doing this we were able to discover new ways to implement the program. We found our most successful activities were those that had open ended uses; there are 50 different things you can learn from playing with socks, for example. Finding out that caregivers appreciated this type of Play Coach more, we were able to expand our program to two more topics (so far), cardboard tubes and plastic bottles. These two new additions will recycle commonly thrown away items and demonstrate a myriad of uses for them for young children, ranging from engineering structures to making and playing musical instruments.

What would you like to see changed for the next program year?

It would be nice to meet with some of the other institutions and see what they are doing with their audience first hand.

As an early childhood educator, I would love to see more emphasis on ensuring that the activities shared are developmentally appropriate and based on what we know about best practices for young children and families.

I was more or less happy with the program this year. It would be great not to have conference calls quite so early in the morning but I understand this is necessary given the different time zones of the participants.

None