



National Living Laboratory 2014-15 Cohort Stipend Final Report

Children's Museum of Richmond, Virginia Commonwealth University

Who Are We?

The Children's Museum of Richmond (CMoR), a non-profit organization, exists to create innovative learning experiences for all children and those who support them that inspire the next generation of creative problem solvers. The Children's Museum of Richmond works primarily with children under 8 years of age. The Living Lab helps explain the importance of childhood development to parents which helps CMoR create an understanding between the museum's exhibits and hands-on learning.

Dr. Carole Ivey, assistant professor in the Occupational Therapy Department at Virginia Commonwealth University, regularly works with the Children's Museum of Richmond. The primary focus of her research is Praxis, the ability of a child to create ideas and movement. Dr. Ivey's study is attempting to create a baseline measure of children's Praxis Development.

The Children's Museum of Richmond and Dr. Carole Ivey began continually working together in 2010. Since then, the Occupational Therapy and Education Department have worked to help adapt the museum's exhibits for those with physical and learning disabilities along with numerous other projects. Liz Pearce and Dr. Ivey attended the Living Lab regional symposium and decided it was the perfect program to combine both institutions.

The Children's Museum of Richmond uses a rolling cart as its Living Lab space. The cart is currently all white but will be branded with large vinyl stickers soon. Guests interact with the Living Lab researchers from the Occupational Therapy Department approximately two days a week.



The Living Lab Cart

Goals of the NLL Stipend Award

There were two main goals for the NLL Stipend Award:

1. Recruit other researchers to collaborate with the Living Laboratory at CMoR;
2. Develop and coordinate a clear mechanism for approval, managing, tracking, and scheduling onsite research at the museum.

Currently, a mechanism for approval, managing, tracking, and scheduling has been created and the museum is working to bring in a new researcher who is very interested in beginning work with the Living Lab.





Enhancing the Visitor Experience

Guests at the Children’s Museum of Richmond have benefitted greatly from the inclusion of the Living Lab. At first, visitors were a little hesitant to participate but as they became accustomed to the researchers, guests would ask when the researchers were here. Children loved the activities and were eager to try again and again. One child did the activity over 5 times. Parents also enjoyed the opportunity to ask researchers questions about why their child was doing a particular activity. While no specific quotes were submitted by guests, researchers had many conversations regarding the study’s research, methodology and analysis. Guests also were curious about the possible impact the distractions in the museum may have on the study. Overall, parents have gained a great deal of insight into how their children function and how science works.

Over the course of the stipend period, the Living Lab has seen:

| Participants | Educational Opportunities |
|--------------|---------------------------|
| 105 | 210 |

This is over the course of 47 hours of research at the museum.

Mutual Professional Development

CMoR’s Living Lab Team is Liz Pearce, Director of Parenting Engagement; Will Crowder, Mission Coordinator; Ashley Johnson, Education Coordinator and Jenna Petrosino, Program Coordinator. In addition the museum’s guest services department regularly works with the researchers. The Academic Living Lab Team is lead by Dr. Carole Ivey who works with a number of graduate students and research assistants.

The museum’s staff has helped train Living Lab researchers on how to best approach museum guests in both a formal orientation and daily greetings. Museum staff has gained knowledge regarding Praxis and childhood development in these greetings. So far ten museum staff members have participated in a greeting with researchers. Jenna Petrosino had this to say about her experience, “It’s amazing that even someone, like myself, with a higher degree in child development and instruction can gain new insight each day by working with and observing this research. Specifically, Dr. Carole Ivey’s approach to child development from an occupational therapy perspective is something absolutely new to me and the guests at the museum. It has been a truly rewarding experience.” Ten researchers have also had the opportunity to gain experience working with the public. Becky Balog, one of Carole Ivey’s students and a researcher with Living Lab, is thrilled with the educational opportunities: "Not only do we, as students, get to gather and process data that impacts the field of occupational therapy, but we also get to share the joy of exploration with children and their families. We are learning from them and they are learning from us!"



A guest and researcher interacting





Research Happenings at Our Site

The research being done at the museum focuses on praxis and creating norms in praxis development for children of different ages. Currently, no such information exists and this data collection will allow for better understanding of praxis and praxis issues. Praxis is the ability to come up with ideas, plan an action, and sequence an action. To test the ideation portion of praxis, children are asked to describe as many actions for which they can use a string. To test the planning and sequencing, children must move a washer from one side of a maze to the other without touching the washer.



The Praxis Ideation Test

The data has been analyzed, which has provided scoring norms for children on the two screening assessments of praxis (Test of Ideational Praxis and Motor Planning Maze Assessment).

Continued analysis is planned to compare the collected scored in the museum setting versus the individual preschool settings collected previously to see if/how the museum setting altered our data (looking at the validity of museum research).

Secondly, additional data is being collected on these 2 assessments with children with identified praxis issues, to look at discriminative validity (do children with praxis issues score differently than typical children). This data is not being collected in the museum.

Outcomes and Future Goals

The Living Lab at the Children's Museum of Richmond has been a success. VCU researchers are obtaining the data they need and museum's guests are gaining intimate knowledge of childhood development. The daily interaction with guests has improved researchers ability to explain their research and recruit participants. Recently, graduate students presented some of their research to the museum's Board of Trustees; the board understood all the topics even though none are truly versed in scientific studies or Praxis. Museum Educators and Guest Services have gained additional knowledge on childhood development and better understand the museum's mission.

The Children's Museum of Richmond is now hoping to begin implementing Research Toys at the museum. With the success of the current research and the interest from museum guests and staff, the natural next step is to start creating and performing more everyday activities. These additional opportunities will help spread knowledge of childhood development and the scientific method to both our guests and the staff.

