Research Spotlight

Testing Reasoning Skills

Graduate student, Karrie Godwin is working with Dr. Anna Fisher to investigate young children’s reasoning skills. In particular, they are interested in investigating the relationship between young children’s reasoning skills and other general cognitive processes such as memory, attention, processing speed, and language ability. Because the study involves diverse measures, our 3, 4, and 5-year-old children will participate in multiple research sessions with Karrie over the course of a month’s time. Many of these experimental tasks have been described in previous newsletters, so herein we introduce only the new ones. As usual, parents will receive descriptions of each session on the day the child participates.

The Thinking Game

In the Thinking Game, children are presented with a variety of reasoning tasks from the Weschler Preschool and Primary Scale of Intelligence (WPPSI). They are presented with various objects and asked to answer questions about the objects or physically manipulate the objects (e.g., rearrange, build, or sort the objects). Children are also asked to label various pictures, complete a puzzle, and build a block tower.

The Memory Game

In the Memory Game, children will listen to a list of words. Subsequently, children will be asked to remember the words from the list. In the first part of the game, children will be read a series of familiar nouns and asked to repeat them in the same order they were presented. For example, children may be presented with the words "duck, house, chair" and then asked to recite the words in order. In the second part of the game, children will be asked to repeat the items but in the reverse order in which they were presented. For instance, if children are given the words, "duck, house, chair", the correct response would be "chair, house, duck".

The Help Zibbo Game

In this game, children will assist Zibbo as he organizes and counts objects. In this task, children will be told where Zibbo will put a particular object. Then children will be asked to predict where they think Zibbo will put other objects. For example, children may be told that “Zibbo will put his cup here. Where do you think Zibbo will put this cup/basketball?”).
Subsequently, children will be shown pictures of various objects and asked to help Zibbo make “more-or-less” judgments about the pictures. For example, children may be shown 7 pictures of flowers (5 red roses and 2 white daisies). Then children may be asked to help Zibbo find out if they have more roses or if they have more flowers.
The “Hear Me” Project

In collaboration with the Carnegie Mellon University CREATE Lab and the Pittsburgh Association for the Education of Young Children (PAEYC), the Children’s School is participating in a regional project to capture and distribute youth voices from across Southwestern Pennsylvania. “Hear Me” involves collecting children's digital audio stories on a web site so that they can “hear, see and read each other’s stories, while educators, parents and policymakers can listen to the poignant and playful insights of our children.” We have already begun talking with the children about creating their own stories and using Flip Cams to record and replay them. If you are willing to have your child’s stories shared via the “Hear Me” project, please sign the enclosed permission slip and return it to the Children’s School office as soon as possible. You can explore the stories that have already been created, edited, and posted at www.hear-me.net. Note that no full names or visual images of the children will be shared on this web site.

Innovation Time at Camp

Jeremy Boyle, an artist in residence in the CREATE Lab at CMU, will partner with our summer camp staff so that the children can explore electricity. During this pilot project, the children will run experiments and learn to make simple circuits, with a primary goal being to offer technology to the children as a creative and expressive medium. The facilitators will work to keep balance between exploration, guided learning, and expressive application. The children will be introduced to a wide range of electrical and electronic components and concepts. Initial lessons will involve exploring disassembled electronic and electrical equipment with observations and conversations about what we see, what things might do, how they might be used, etc. The process of disassembling will be a recurring theme over the course of the program, culminating in dissembling small electronic toys to identify and repurpose components that will by that time be familiar to the children.

Between each recurrence of disassembly, the facilitators will introduce concepts and components, beginning with the most basic components of simple circuits, including the wire leads, batteries, knife switches, lamps and motors. Children will have the opportunity to explore and learn the fundamentals of circuits and build their own, working in small groups of 2-3 students. Children will learn, explore and test many fundamentals, such as conductivity. For example, the children will take a known circuit that they have made and use it as a device to test for and sort materials by conductivity. This activity will lead to explorations and discussions of various types of switches. The facilitators will continue to introduce new components and concepts, such as polarity with LED’s and battery capacity as circuits are built in series. Along the way, children will frequently sketch the circuits they are making as a method to demonstrate and communicate their growing knowledge.

Later in the program, the children will explore sound generation circuits. They will apply their knowledge of components to find ways to control and vary sounds (with switches, potentiometers and other sensors), effectively inventing their own electronic instruments. As they work with facilitators to develop a language for describing the electronic and electrical components and principles, they will do the same with sound. They will explore composition and the organization of sound, balancing their learning of science with expression through sound.