Keeping Parents Informed about Research

The Research Spotlight section of the monthly newsletter is one way Children’s School parents can learn about research in progress. Also, each time your child participates in a study that involves playing a “game” with a researcher (i.e., as opposed to merely being observed), he or she will get a participation sticker suggesting that you, “Ask me about the … game” and a study description detailing the task. We also have recent articles resulting from Children’s School research posted on the school website (www.psy.cmu.edu/childrensschool) and a notebook of articles in the office.

Observations for Psychology Assignments: Students from Dr. David Rakison’s Child Development class have already begun their periodic observations this fall. For each assignment, they observe specific differences between preschoolers and kindergartners in motor skills, social interactions, language, etc.

Research Methods Class Studies: Students in Professor Erik Thiessen’s Developmental Research Methods class will start with a lab entitled the Doll Game to explore children’s developing theory of mind, which is the ability to attribute mental states to oneself and others, as well as to understand that others have beliefs, desires, and intentions that can be different from one’s own. Specifically, they will test whether they can help children better understand the perspective of a character who doesn’t know something has been moved while she was out of the room by having them cover their eyes while listening to a similar story being read and enacted by a researcher. Later in the semester, students will work in groups to conduct a study of their own design, which will be approved both by their teacher and by Dr. Carver.

Feel free to contact Dr. Carver to discuss any questions you have about research.

Research Spotlight

The Kris Koala Game

Senior Matt Mastricova and his advisor, Dr. Anna Fisher are investigating how context clues affect language acquisition. There is debate over which methods are most effective in teaching children new vocabulary. One prevalent theory is that we learn new words by using context clues from the phrases and sentences in which we encounter the word. For instance, we might learn that frigid means cold because it is in the same sentence as chilly or frozen. The Kris Koala game investigates whether synonymous context clues or example context clues are more helpful to children when they encounter unknown words. For example, a synonymous context clue would be using the word nervous in the same context as the word timid. An example context clue would be saying that someone who is nervous might stutter or worry about small problems. In this task, children listened to a story including words created by a researcher. These words were introduced using one of these context clues. Researchers then asked children which of two possible definitions was correct for each word. Researchers expected the children to be more accurate at choosing the correct definition for words that were paired with a synonymous context clue. Educators and parents can use the results of this experiment to decide the best ways to teach children new vocabulary words.
Testing Reasoning Skills

Graduate student, Karrie Godwin is working with Dr. Anna Fisher and several other research assistants 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 for Karrie’s dissertation, our children will participate in multiple research sessions with Karrie over the course of the fall semester. 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 be 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 Animal Game:** In the Animal Game, children are presented with a series of word pairs. Children are asked if the second word of the word pair is an animal. For example, children might hear the word pair "bunny – rabbit" and then decide if the second word ("rabbit") is an animal or not. Children respond by pressing a yes or no button on the computer.

- **The Button Game:** In this task, researchers are measuring children’s sustained attention and inhibitory control via a computer game that presents a series of pictures. Children are asked to press a button in response to specific pictures and **not** to press the button when they see other pictures. For example, children may be asked to press the space bar whenever the picture of a *ball* appears.

**The Picture Finding Game**

Early childhood is a time when children discover many new words. In this study, Layla Unger and Wyatt Demilia, both of whom work with Dr. Anna Fisher, are interested whether children are familiar with the words we plan to use in a follow-up study on conceptual development. In this task, children are shown slides of pictures. Then, children are asked to find the picture representing the target word on each slide. For example, we might ask children to find a ‘moose’ among four animal images.
Research Spotlight, continued …

The Help Zibbo Game

Layla Unger, a graduate student working with Dr. Anna Fisher, is investigating the ways that children organize plants and animals based on a variety of different relationships between them. For instance, children might organize these concepts based on whether they appear in the same kind of environment, whether they belong to the same biological group (such as mammals, fish, birds, or plants), whether they’re big or small, whether people eat them as food, and so on. In the Help Zibbo Game, children are asked to help Zibbo “organize his favorite things”. Zibbo’s favorite things include twelve plants and animals that are depicted in black and white pictures, like those below. During the task, children receive cards depicting these pictures and are asked to sort them on a game board four times. The purpose of sorting the same pictures multiple times is to test whether children can group the pictures in a variety of ways, and, if so, to see what these grouping strategies are.

The Moving Eyes Game

The world around us is complex and maintaining focused attention can sometimes be challenging, even for adults. The goal of this project in Dr. Erik Thiessen's lab is to investigate the developmental course of deliberate selective attention and to examine factors that play a role in attentional selectivity at different points in development. In this project, researchers ask children to play a game in which they see several objects moving on a Tobii T60 eye tracker (which looks like a typical computer screen) landing on one of the nine screen locations, each a different color. Children are instructed to watch a particular object while ignoring the rest of the objects. When the objects stop moving and disappear from the screen, children are asked to name the color of the grid in which the object disappeared. Children play the Moving Eyes Game several times, tracking either many objects or just a few objects at a time. Additionally, if there are technical issues with the eye-tracking hardware, a session may be begun on one day and finished on a later day. Children’s performance in the Moving Eyes Game will help researchers to map the developmental course of deliberate selective attention and improve scientists’ understanding of this basic cognitive ability required for successful performance in many everyday tasks.