Research Spotlight

The Fish Game

Dr. Anna Fisher is investigating the relationship between young children’s reasoning skills and other general cognitive processes such as memory, attention, processing speed, executive function, and language ability. In this “fish game”, graduate students Karrie Godwin and Bryan Matlen are measuring the extent to which children can inhibit distracting information and selectively focus on relevant information.

The task involves a computer game during which children are presented with a series of fish similar to the ones pictured below. Children are told that their task is to feed the center fish by pressing either the left or right mousepad button, depending on the direction that the fish is facing (e.g., "Your job is to feed only the fish in the center. So what matters is where the middle fish’s mouth is pointing."). In this game, the center fish is surrounded by four other fish (two to its left and two to its right). Sometimes the four fish may be swimming in the same direction as the center fish and other times the four fish may be swimming in the opposite direction. This task is called a “flanker” task because it tests whether children can ignore the objects that flank the focal object and respond only based on the object of interest. In the case below, no inhibition is necessary because all the fish are facing in the same direction, but the task is much harder when the flanking fish are facing the direction opposite of the center fish.

The Shape Game

Dr. David Klahr and graduate student Bryan Matlen are interested in what types of examples optimize children’s learning of basic shape categories. To determine these features, they show children standards of various shape categories (e.g., rectangles, triangles, pentagons, etc.) and ask the children to compare them. Some comparisons have two positive examples of a particular shape (e.g., one rectangle shown straight and the other on an angle), and others have both a positive and a negative example of a particular shape (a rectangle and a five sided figure as shown below). After learning about a shape category from these examples, children are presented novel shapes and asked whether they are also examples of the trained shape category. We are interested in what kinds of comparisons optimize the correct generalization of a shape definition, as well as which comparisons appropriately limit the definition’s generalization to shapes that are not in its category. This research will help educators determine how to best explain and exemplify concepts during instruction.
Research Spotlight, continued …

The Magnet Game

Undergraduate Benjamin Howe is completing dual thesis as the culmination of his studies in Architecture and Psychology. With the guidance of Dr. Sharon Carver and architecture professor Dale Clifford, he is designing an educational activity that demonstrates the fusion of learning and design principles in order to effectively engage children in exploring magnetism and learning key concepts about magnets. At the Children’s School, Ben will observe children's engagement with his Magnet Learning Center and do pre- and post-test interviews with children about their knowledge of magnets. As a comparison, half of the children will spend an equal amount of time exploring a popular commercially available magnet toy to see whether those who interact with the toy Ben designs learn more. This research could be beneficial in providing a new educational magnet toy on the market for use in schools or informal settings at museums only if it can be demonstrated that the Magnet Learning Center truly has an educational impact that other magnet toys on the market may not be able to match.

Undergraduate Spotlight

Tyler Dossett is a junior Psychology major at Carnegie Mellon. Tyler writes, “I am always thrilled to go to work at the Children’s School. After I graduate, I plan to use my major and minor to become a children’s drama therapist where I will use acting and the arts to conduct therapy sessions. Working at the Carnegie Mellon Children’s School is such a rewarding experience not only because of its wonderful teachers, who are all very passionate about teaching, but also because of the amazing children that I get to work with every week. The Children’s School has such a positive and upbeat aura, and it is always inspiring to see the children so interested in learning and exploring the world around them, especially when I get a chance to participate by reading to them or playing games with them. Every day, I see the children grow so much by learning new skills, such as writing or counting. It is so great to have a part in their development into amazing people.”

Katie Schaefer is a senior education major at Carlow University who is doing a seven-week, full time student teaching experience at the Children’s School. She has joined the Preschool 3’s Team to work with her cooperating teacher, Mrs. Flynn, until Friday, April 6th. For the previous seven weeks, Katie was a 3rd grade student teacher at the Campus School of Carlow University.