Research Spotlight

The Chinese Word Game

This experiment involves children playing an iPad learning game (uTalk) with Chinese words and pictures of simple colors and body parts, to test how easily children can learn new second language words in a game context. Professor Erik Thiessen and his research team hypothesize that although the task will be harder for children than adults, the children will show learning of new Chinese words. Also, they hypothesize that older children will learn more due to increases in memory and attentional capacity. Finally, they hypothesize that the greater simplicity of the color labels (compared to more complex pictures for body parts) will lead to better learning in this limited training context. There is little exploration of how effective training techniques designed for adult language learners are when they are used with children. However, the fact that children are more successful language learners in general means that providing useful and age-appropriate language learning experiences before puberty is an important goal. Therefore, we aim to modify existing training approaches for younger learners. Ideally, instructed practice like this game would be only one component of a richer, more interactive second language learning program.

Perceptual Similarity and Young Children's Understanding of Categories

In this series of studies, Dr. Anna Fisher (mother of Sasha, K), graduate student Karrie Godwin, and their research team are investigating the role of conceptual and perceptual information in category-based reasoning and induction in early childhood. In the Animal Name Game, children are given a category and asked to generate as many items as they can that belong to that particular category. For example, children may be given the category ‘Pets’ and asked to name as many pets as they can think of (e.g., dog, cat, fish, etc.). In order to better understand how children make category decisions when different sources of perceptual and conceptual information are in conflict, children will play one of three different games. In the Similarity Game, children are told that objects that look similar go together. For example, children might see a whole lemon, a lemon wedge, and a tennis ball. Children would then be asked to identify which objects go together based on physical similarity (e.g., shape, color, size). In the Matching Game, children are told that objects that are the same kind of thing go together (in this case, the whole lemon and the lemon wedge). In the Reasoning Game, children learn that one of the objects has a particular novel property, and then must decide whether this property can be generalized to the other two objects.

User Testing of Technology Innovations

The Children’s School is a partner in several design projects, so our children participate in user testing of prototypes. The ENGAGE team is designing computer games to teach physical science concepts, together with assessments to document children’s learning. Also, the Message from Me team is currently prototyping an iPad version of the family communication tool that we already have in our classrooms.
Research Spotlight, continued

The Impact of Attention Allocation on Learning and Retention

In another series of studies, Dr. Anna Fisher, graduate student Karrie Godwin, and their research team are investigating how kindergartners allocate their attention in learning environments to determine how physical features of the environment (e.g., toys, posters, art work, etc.) can enhance or hinder children’s ability to attend to the content of a lesson and whether the children’s distribution of attention changes over time. They are also examining whether children’s ability to effectively distribute their attention has consequences for both learning and retaining new content. First, in the Science Game, children are asked questions about various science content (e.g., which of the bones shown is the strongest bone in your body?). This pretest helps researchers determine what children already know about the lesson topic. Next, as an orientation, in the Read-Aloud Game, children listen to a short story and then answer questions about its content, again by marking the picture that shows the correct answer. Then, the children will participate in the Classroom Game daily over a 2-week period (for a total of 8 sessions). On each day, a researcher teaches the children a mini-lesson in a small group format. For 4 of the lessons, the physical environment includes items that are typically found in early childhood classrooms but that may be potential sources of distraction (e.g. posters, artwork, manipulatives, etc.). For the remaining 4 lessons, the physical environment only includes visual aids and materials directly relevant to the lesson. Each lesson lasts approximately 10 to 15 minutes. During each lesson, children listen to a short non-fiction story and then answer content questions to test their initial learning of the material. Finally, in the spring, the children’s long-term retention of the science content will be assessed via the Story Game.

The Animal Name Game

In this study, Dr. Anna Fisher’s research group is investigating the relationship between young children’s reasoning skills and other general cognitive processes such as memory, attention, processing speed, knowledge organization, and language ability. 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. Researchers anticipate that children’s performance on the Animal Game will improve with age and that it will correlate with their performance on the Help Zibbo Game and the Similarity Game (See October 2012 Newsletter).