Research Spotlight

The Read Aloud Game / The Classroom Game

The purpose of Drs. Anna Fisher and Karrie Godwin’s research is to investigate how children allocate their attention in learning environments. These researchers are particularly interested in examining how physical features of the environment (e.g., posters, art work, etc.) can contribute to or hinder children’s ability to attend to the content of a lesson and whether the distribution of attention changes over time. They are also examining whether children’s ability to effectively distribute their attention has consequences for learning new content. In the Read-Alooud Game, kindergarten children listen to a short story and then answer questions about the content of the story by choosing one of four pictures (see example below). After learning how to answer comprehension questions in this manner, kindergartners will participate in the Classroom Game daily over a 3-week period (for a total of 15 sessions). In this study, researchers are teaching children 15 mini-lessons in a small group format, very similar to our circle time. For 10 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, learning materials, etc.). For the remaining 5 lessons, the physical environment only includes visual aids and materials directly relevant to the lesson. Each lesson lasts 10 to 15 minutes. Each time, children listen to a short story and then answer questions about the story content. Researchers also videotape the sessions in a manner that does not show the presence or absence of the potentially distracting materials so that assistants can code the children’s on- and off-task behavior and then relate it to their comprehension scores.

Functional Near Infrared Spectroscopy (fNIRS)

Children with permission to participate in fNIRS studies are taking part in a study in which Dr. Anna Fisher and her researcher associates measure brain activation in the left and right prefrontal cortex during free play. They offer children the set of toys depicted below and ask them to play with the toys for 3 to 5 minutes. The ultimate goal of this project is to understand how developmental increase in coordination among different brain regions relates to development of a number of core cognitive capacities, including language and attention. The free play fNIRS recording is the first small step towards addressing this question because researchers are developing a methodology for collecting ‘resting state’ brain activation – in other words, brain activation in the absence of an externally prescribed goal or task. Better insights into resting state brain activity and developmental changes in this activity across the age 3-6 span (such as improved coordination among different brain regions) can enable psychologists to later compare resting state activation to that evident during more structured tasks. If you have not yet registered your child for fNIRS research participation and wish to do so, please contact Miss Drash for a permission form (adrash@andrew.cmu.edu). If you have questions about fNIRS procedures or safety protocols, please contact Dr. Carver (sc0e@andrew.cmu.edu).