Typical investigations of multitasking deal with scenarios that involve the use of independent forms of media. From the perspectives of learning design and child development, I suggest there are two additional situations relevant to young children that bear further investigation: (1) their interaction with multiple media sources designed to be used together, and (2) their use of electronic toys intended to prompt imaginative play. I briefly outline examples and research questions for each of these situations, and propose that electronically logged naturalistic play data may provide insights into children's multitasking and attentional strategies, learning, and development.

**Designing for Multitasking**
While media multitasking typically involves the use of media intended to be used separately, some entertainment and educational products are specifically designed to engage children through separate but coordinated media. Examples include the Nintendo DS with two screens, and the type of “paper-based multimedia” represented by LeapFrog’s Tag Reading System, which enhances printed books with interactive audio content (see Appendix below). Similarly, media providers like Sesame Workshop often distribute similar content across television, toys, websites, and videogames. While these multiple manifestations of characters and storylines are typically connected only loosely, they could be designed for more integrated use – e.g., playing with a “plush” character or web surfing in front of TV. I suggest we consider the issue of attention for preschool-aged children in relation to a range of media that incorporate multiple sources of information and require children to divide or switch attention.

**Role of Electronic Toys in Children’s Imagination**
Technology-enhanced toys provide audio-visual content designed to guide children’s attention and experience, while also functioning as props for open-ended imaginative play. A largely unexplored question is how children attend to pre-programmed or customized electronic content, in relation to the imaginative content of their own mental and social worlds. For example, when does attention to audio in a child’s plush toy or interactive role-play prop (e.g., purse) stifle imaginative play, and when does it scaffold play? At question is how these kinds of play influence the development of children’s executive function, creativity, and cognitive growth, as theorized from Vygotsky and Piaget to the present.

**Methods: Analyzing Play Data from Natural Settings**
Media multitasking for children suggests the need for basic and applied research that can inform theory, policy, and the design of products. The coordinated and collaborative inquiries imagined by the seminar planners are likely to include a range of research methods. In my role at LeapFrog, I am especially interested in studying how children use the sort of paper-based multimedia and toys discussed above using the system of logging data that our “connected” products like Tag incorporate. These data track patterns such
as frequency and duration of book use, game level achieved, correct answers, etc. Internally, logging data are used primarily in design research aimed at improving product quality and children’s experience. We plan to make anonymous aggregate data from this system accessible to research partners who want to ask broader questions about children’s attention, learning, and development.

Appendix
Tag Reading System includes a stylus-shaped “reader” that provides audio content when touched to specific areas of a printed page. It uses an optical system to read nearly invisible dots printed over the page content. Tag content is designed to scaffold children’s literacy development with fluid reading of any text, interactive graphics, and game scenarios that focus on comprehension.¹