

# Transparent touchscreens: observing infants' and children's exploration and learning during social interactions

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Infants often engage in gaze-following behaviors when interacting with adults or children. Such gaze-following patterns are considered precursors to social interaction and language learning. Previous studies have typically used laboratory tasks to investigate infants' and children's attention to social cues and their learning during interactions with others. To enhance research feasibility of the interactive components inherent in children's everyday interactions, we introduced a dual touch screen platform known as the Dyadic Interaction Platform for children (DIPc), see Figure 1. This setup enables both partners to see each other through a transparent screen, facilitating direct eye contact, while participants can simultaneously attend to projected images of novel objects in lifelike social interactions. We present data from two studies using the DIPc: first, we explore gaze-following patterns in children with a familiar social partner to explore differences in the extent to which children follow the gaze of their caregiver compared to their friend (age-range: 10-67 months, N=89). Second, we examine word-object learning in children during social interactions with either a peer or the child's mother (age-range: 47-67 months, N=91). Our findings indicate that, during interactions with peers, children were more likely to recognize objects on the screen upon labeling when they had actively sampled the objects by touching them on the screen beforement, which initiated naming of the object. However, they were more likely to recognize word-object pairs when they had previously observed their caregiver sample the object on screen which initiated naming of that object. The method thus revealed that children employ dynamic strategies during word-learning in face-to-face interactions, effectively bridging the gap between traditional study setups and the dynamic complexity of genuine social exchanges in a more nuanced manner than previous research.