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14.022 - Sensitivity to Subtleties in Children's Early Learning and Teaching

Thu, April 16, 12:00 to 1:30pm, Hyatt, East Tower - Green Level, Plaza B

Session Type: Symposium

Abstract

Young children are astute learners and precocious teachers, and these abilities develop over the preschool years. As learners, they selectively learn from accurate and knowledgeable teachers. As teachers, they make decisions about whom and how to teach based on what the person they are teaching knows. A fundamental but as yet unanswered question concerns the relationship between these complementary abilities. To begin to answer this question we bring together research that shows how surprisingly sensitive preschool children are to subtle differences in the behavior of teachers and learners (e.g. how a demonstration is worded, the race of the teacher, the kinds of mistakes a learner makes), as revealed by the child's own opinions and behaviors.

Sub Unit

Division E - Counseling and Human Development / Division E - Section 2: Human Development



Chairs

Kathleen H. Corriveau, Boston University



Samuel Ronfard, Harvard University



Papers

The Pedagogy of Discovery - *Audrey Kittredge*, Carnegie Mellon University; *David Klahr*, Carnegie Mellon University; *Anna Fisher*, Carnegie Mellon University



Young Children's Evaluation of Teachers' Instructions - *Taylor Hovish (Brown)*, Hillbrook School; *Alex Was*,



Harvard University; *Samuel Rontard*, Harvard University

Teaching Self-Regulatory Strategies: The Importance of Model Social Group Status - *Grace Min*, Boston University; *Kathleen H. Corriveau*, Boston University

Preschoolers' Capacity to Infer Differences in Understanding From Learners' Mistakes Impacts the Way They Teach - *Samuel Rontard*, Harvard University; *Kathleen H. Corriveau*, Boston University

Discussant

Kathleen H. Corriveau, Boston University

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Session Summary



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The Pedagogy of Discovery

In Event: *14.022 - Sensitivity to Subtleties in Children's Early Learning and Teaching*



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Abstract

Although exploration-based activities are prevalent in early childhood classrooms, there is little research to guide teachers on the optimal mix of open-ended v highly directive instruction. Bonawitz, Shafto et al. (2011) report that when preschoolers' attention is directed toward a specific function of a novel toy, children discover fewer of its other functions during a subsequent period of free play, compared to children who receive no demonstration. However, Van Schijndel et al. (2010) find that while demonstration decreases children's spontaneous exploration at one exhibit, it increases children's exploration at another exhibit that children do not explore much on their own. The existing literature is thus inconclusive as to whether demonstration suppresses or enhances young children's exploration and discovery. Moreover, little is known about what situational factors might govern these effects, and thus how different degrees of pedagogical explicitness affect young children's exploration in more classroom-relevant contexts.

We investigate the effect of demonstration on children's goal-directed exploration. In Experiment 1 (Kittredge, Klahr, & Fisher, 2013) and Experiment 2, we ask 4-7 year-old children in four conditions to find toy animals in a miniature forest with many possible hiding places. Children in the Baseline condition only receive these instructions, while children in Demonstration, Enhanced Demonstration, and Nonverbal Demonstration conditions also see an experimenter discover an animal, and hear comments that vary by condition (see Table 1).

Across the two experiments, children in the Demonstration condition discover fewer animals in undemonstrated hiding places than children in the Baseline condition. These results go beyond previous work, suggesting that demonstration can suppress exploration even in familiar, goal-directed activities, and even for complex stimuli that support a variety of exploratory strategies. Strikingly, even children in the Nonverbal Demonstration condition, who are not told of the demonstration's relevance to the task, also discover fewer animals in undemonstrated hiding places than Baseline

condition children. These results are consistent with children's imitation of pedagogical demonstrations in the absence of normative language (e.g. Schmidt et al., 2011; Butler & Markman, 2012), and further suggest that this increase in imitation comes at a cost to innovation. Importantly, though, when children receive a hint about other search strategies, demonstration does not suppress exploration: discovery in the Enhanced Demonstration condition is comparable to that in the Baseline condition, and either comparable (Experiment 2) or marginally greater (Experiment 1) than that in the Demonstration condition. Ongoing video analysis will provide a more direct assessment of children's specific exploratory strategies.

These results suggest that the power of pedagogy is multifaceted: Even neutrally worded pedagogical demonstration can limit discovery. However, simply mentioning the possibility of other solutions, even when they are unknown to the teacher, may mitigate this cost.

Experiment Condition Comments on demonstration

1, 2 Baseline N/A (no demonstration)

1, 2 Demonstration "Here's how you can find animals.

gasp I found a lizard!"

1, 2 Enhanced Demonstration "Here's how you can find animals.

gasp I found a lizard!

But, there could be lots of other ways to find animals."

2 Nonverbal Demonstration "Look... *gasp* ...see?"

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Paper Summary