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Children's developing knowledge of and reflection about teaching



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ABSTRACT

A sample of 4- to 7-year-olds ($N = 61$) defined “teaching” and described what and how others had taught them as well as what and how they had taught others. Whereas 4- and 5-year-olds were often unable to define teaching, 6- and 7-year-olds most frequently defined teaching by describing processes that could cause knowledge change. Children who held process-based definitions were more likely to offer examples of what others had taught them, to identify who had taught them, and to describe being taught through direct instruction. They were also better able to describe how they had taught others. We consider the results in light of previous interviews in which children were asked to define learning, and we discuss the implications for children's developing understanding of the connections among knowledge, learning, and teaching.

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Introduction

A fundamental aspect of the human experience is the communication of information (Bloom, 2000; Tomasello, 2010). When communication is intended to change the knowledge state of another person, the communicative act can be described as *teaching*. Some have argued that teaching is a “natural cognitive ability” (Strauss, 2005, p. 368) in that teaching is a universal and basic form of communication that children learn through everyday social interactions rather than through explicit instruction. Even children as young as 3 years can engage in acts of teaching (e.g., Ashley & Tomasello, 1998), and

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school-aged children often explicitly teach others (e.g., Brown & Palincsar, 1989; Flynn, 2010; Rogoff, 1990).

Moreover, teaching is related to children's developing knowledge of their own and others' mental states—in particular, what children understand about knowledge and beliefs (e.g., Astington & Pelletier, 1996; Strauss, Ziv, & Stein, 2002; Wellman & Lagattuta, 2004; Ziv & Frye, 2004; Ziv, Solomon, & Frye, 2008). For instance, children's understanding of their own and others' knowledge allows them to infer whom to teach and to recognize situations that necessitate teaching because teaching is motivated by understanding knowledge gaps between individuals. The more children understand about knowledge, the more they should also recognize how different kinds of actions could be effective to support successful teaching. This line of research suggests that children's developing knowledge of teaching is related to their developing theory of mind—or understanding of others' mental states generally construed (see Knutsen, Frye, & Sobel, 2014, for a review).

Children's understanding of teaching has usually been investigated in two ways: by examining what aspects of others' behavior children use to identify teaching and by investigating how children actually go about teaching others. As examples of the first way, Ziv et al. (2008) showed that 5-year-olds, but not 3-year-olds, recognized that teaching occurred only when an individual intentionally demonstrated actions to another person and when this person was attending to the actions. The situations that they set up examined children's judgments about whether teaching had occurred, or in other cases who a teacher would teach, based on the mental states of the teacher and potential students. As an example of the second way, Ashley and Tomasello (1998) introduced pairs of children between 24 and 42 months of age with a novel goal-directed task, which they learned collaboratively. Once a pair had mastered the task together, one of the children was paired with a naive partner and the authors examined whether and how the more knowledgeable child taught the novice. The youngest children in the study could not engage in such communicative acts, but by 30 months children communicated with one another about the task and 42-month-olds engaged in intentional communication through specific directed actions.

These data suggest that even young children begin to integrate their understanding of their own and others' knowledge into both the judgments they make about teaching and the ways in which they communicate information in order to teach others. What these studies do not do is examine how children define and reflect on their own experiences of teaching outside of the laboratory. If children's understanding of teaching is related to their developing knowledge of others' mental states, then one might expect to see further development past the fourth birthday because children's abilities to reflect on their own thoughts, pretenses, and emotional responses all develop between 4 and 8 years of age (e.g., Eisbach, 2004; Flavell, Green, & Flavell, 1995; Lagattuta & Wellman, 2001; Richert & Lillard, 2002). In particular, children's understanding of what teaching entails, and their metacognitive awareness of what and how they have been taught, may develop during this period.

Although children's explicit understanding of teaching remains relatively unknown, there have been studies examining children's developing ability to reflect on their learning. Bemis, Leichtman, and Pillemer (2011) asked 4- to 9-year-olds questions whose answers the children were likely to know. After giving a correct answer, children were asked how they had learned that answer. Even the youngest children could say how they learned the information, but their ability to do so was limited. Only 25% of 4- and 5-year-olds stated the source of their knowledge; although 7- to 9-year-olds did so significantly more often, only 45% of the sample did so.

Sobel and Letourneau (2015) conducted a similar investigation, asking 4- to 10-year-olds what they thought "learning" meant. After children defined learning, the experimenter asked them to give examples of what they had learned in the past and to describe how they had learned in each case. Nearly all of the 8- to 10-year-olds they examined (95%) defined learning as a process involving a source or strategy that would result in a change in knowledge (e.g., "when your teacher tells you something," "when you practice again and again until you know it"), whereas only approximately 42% of the 4- and 5-year-olds defined learning in that way. These data showed a clear linear trajectory for children's understanding of learning as a process. Most of the younger children did not define learning as a process; instead, they described it based on the types of content that could be learned (e.g., "like reading and math"; ~ 16%), defined learning circularly (e.g., "learning is when you learn"; ~ 2%), or did not respond to the question (~ 40%). Independent of age, the way in which children defined learning

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