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# A Micro-View on Children's Shared Thinking on Questions Forming

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## Introduction

When individuals ask questions, they really are performing speech acts in social contexts. A theory of questioning in naturalistic settings therefore must address this pragmatic level of discourse (Graesser & Murachver, 1985). In the current study, we take a close look at children's collective processes of generating questions as a form of task designed to lead to deep learning and understanding. Such a theory should allow us to increase the ecology validity of theory of questioning.

## Research Design

### Research Context and Data Sources

Enacting the precepts of a microgenetic method (e.g. Kuhn, 2002), we videotaped 2<sup>nd</sup>, 4<sup>th</sup>, and 6<sup>th</sup> grade children's interactions in questioning generating tasks over multiple sessions to observe the question generation.

### Data Analysis

Children's conversations were transcribed preliminarily to conduct interaction analysis (Jordan & Henderson, 1995). After reading the transcripts, we make a tentative claim, and then we discussed and reviewed other episodes to check whether our claims represent our data. Based on continually check, discussion and revision, we formulate current three claims representative of our data.

## Results

### Activating Questions Constraints

Children on their own and with their peers construct constraints to allow some types of questions and exclude others. Activating constraints not only avoids group members' thoughts deviating from chosen central focus, but also implies hidden assumptions about some specific perspective.

### Creating Candidate Questions

Our study reveals that the point inconsistent or comparable with what children know is a possible start to create a candidate question.

## Shared Editing of Final Questions

Shared editing of the questions children ultimately construct serves as a context that scaffolds children in their thinking, provides explanations to exchange individual understanding, and promotes children to justify or rethink candidate questions that should go on record.

## Discussions

### Questioning Derives from an Assumption That Leads Individual to Make Cognitive Decision

Constraints offer a way of decreasing the cognitive load of individuals and facilitate children's engagement in the search and identification of relevant knowledge.

### Questioning Functions as Accommodation/ Assimilation

The videotaped interactions of the shared production of questions provide empirical evidence for demonstrating children's agency in learning and represent how individual conducts accommodation and assimilation to extend their knowledge.

### Questioning Is an Evolutionary and Reciprocal Social Process

Questioning is not a linear process. It is a social process similar with other cognitive process (e.g. designing, Roth, 2001). The dynamics of questioning reflect on children's social editing, which promotes children concept evolution and creates a concise product.

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