

## **Explicit Comprehension Instruction in an Automated Reading Tutor that Listens: Report of Progress, Year One**

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**Summative Statement:** This poster describes the reading comprehension instruction that we are developing in Project LISTEN's automated Reading Tutor.

**Abstract:** How should an automated Reading Tutor that listens and speaks teach reading comprehension strategies? Research on effective classroom reading comprehension instruction suggests key elements to incorporate: (1) use of fictional narrative texts and informational texts well-suited to reading comprehension instruction (e.g., with strong story structure and considerable content); (2) setting a purpose for reading at the outset of each text; and (3) an apprenticeship or gradual release of responsibility model (Pearson & Gallagher, 1983) in which the tutor provides explicit teaching, modeling, and collaborative and independent practice. We are focusing on four reading comprehension strategies supported by research literature and well-suited to technology's affordances constraints: questioning, visualizing, comprehension monitoring, and summarizing.

In year 1 we are selecting texts suitable to teach these strategies; scripting the instruction, practice, and assessment to insert; automating these scripts for Project LISTEN's Reading Tutor; user-testing them on second and third graders who use it daily at two elementary schools; iterating on their design based on user-testing; transcribing children's spoken responses recorded by the Reading Tutor; annotating how an expert practitioner would interpret and react to those responses; and using this data to identify useful categories and features of oral responses to detect. This analysis is guiding our efforts to classify spoken responses automatically – initially in off-line experiments on the recorded speech, and subsequently on-line in the Reading Tutor. This work should enable the Reading Tutor -- despite the limited accuracy of speech recognition -- to 'listen' for students' strategy use and comprehension processes [1], and respond accordingly.

1. Zhang, X., J. Mostow, N.K. Duke, C. Trotochaud, J. Valeri, and A. Corbett. Mining Free-form Spoken Responses to Tutor Prompts. *Proceedings of the First International Conference on Educational Data Mining*, June 20-21, 2008. Montreal.

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