METHOD

Participants

Data were collected from 10 first-grade beginning readers with data from six readers ultimately proving usable. Cory, Esmeralda, Javier, Kimberly, Mac, and Rashaun attended both public and private schools. Esmeralda and Mac were Spanish-English bilingual and biliterate. The six readers represented three ethnic ancestries—Hispanic American, African-American, and European-American—as well as diverse socioeconomic groups.

Data Collection

I intentionally used a text designed for instructional use in schools that a first-grade beginning reader might be able to read without support but one which would elicit some miscues in the reading. After experimenting with several texts, I selected *I Saw a Dinosaur,* a Literacy 2000 Stage 2 Set D book published by Rigby, written by Joy Cowley (1988), and illustrated by Phillip Webb.

I collected three sets of data for each reader. The primary set was in the form of the oral reading with the eye movement data. There were two secondary sets of data: a modified Burke Reading Interview and retellings, which were used to uncover readers' conceptualizations of reading and to confirm their comprehension of the stories that they read. The retellings are a standard component in any miscue analysis. The data were collected using an ASL model 5000 eye-tracking machine, a computer to record oral data, and an audiocassette recorder to collect back-up and additional oral data.

Analyses

Paulson (2000) used eye movement research in conjunction with miscue analysis to create a hybrid form of analysis that he has called EMMA (eye movement miscue analysis). EMMA uses both miscue analysis and eye movement to examine the relationship between eye movements and miscues that readers produce as they read in order to reveal the complex relationships between where the eye has been directed by the brain and what the voice is producing as an oral text.

I performed three levels of analysis: miscue analysis of the reading, eye movement analysis of the reading, and EMMA of the reading. A total of 1,308 eye fixations on print were analyzed. Again, eye movement and EMMA are the focus of this article.

Findings

First-grade beginning readers in this study fixated (or looked at) print, pictures,