

# New Insights: Eye Fixations and the Reading Process

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## What's Going on Here?

In the name of reading research, there have been many claims concerning the way readers read. Adams (1999) reports that "good readers do read word by word, left to right, and line by line." Ehri (1998), citing studies by McConkie and Zola (1981) and Rayner and Pollatsek (1989), writes that "the eyes fixate on practically every word in a text, sometimes more than once . . . Even words that can be predicted with 100% accuracy are not skipped. This indicates that the eyes are picking up and processing each word when reading" (p. 10). Grossen (1997) claims that good readers do not sample text and predict words, but instead see every letter on the page. Stanovich (1992) and Vellutino (1991) make similar claims, stating that fluent readers do not skip words when they read.

Other eye movement research, however, paints a different picture. Rayner (1997, p. 319) found that "at least 20% to 30% of the words in text are skipped altogether"; Just and Carpenter (1987, p. 37) found "about 68% of the words are fixated"; and Hogaboam (1983, p. 315) found that "about 40% of the words were skipped." In a more recent eye fixation study, Paulson (2000) reports similar rates of non-fixation.

In the present study, beginning readers' performances were examined with great scrutiny to look at both the quantity and quality of words skipped during reading.

## A Closer Look

In an effort to better understand what beginning readers do as they read, I conducted a study of the reading performances of six first-grade beginning readers. The study

employed eye movement, miscue analysis, and EMMA (eye-movement/miscue-analysis), as developed by Paulson (2000). Paulson, using the same methodology with adult subjects, found that readers did not fixate on every word. As I looked at the data generated by my first-graders, I found that their performances substantiated this finding and led to some additional insights concerning readers' eye movements and the implications for reading theory and instruction.

While my study examined more than the question of fixation alone, in this article I am focusing on the findings related to fixations. In this study, six first-grade beginning readers read a story called *I Saw a Dinosaur*, written by Joy Cowley, illustrated by Philip Webb, and published by Rigby.<sup>1</sup> Within the story, there are 55 running words. Of the six readers chosen randomly, there were two females and four males from varying socioeconomic groups. All attended public schools. Readers were European American, African American, and Latino American; two were bilingual. According to standard miscue analysis procedures, readers were asked to read the story from a computer screen without prior knowledge of the text. Their eye movements and oral readings were collected and analyzed using miscue analysis and EMMA. Here are the major findings that emerged from analyses of the readers' 1,308 fixations.

### **1. Readers did not fixate (look at) every word as they read.**

Figure 1 shows Rashaun's fixations as he reads page 6 of the story. His eye-fixation sequence begins at fixation number 147 on the bear's chin, shifts to the white margin just

1. All text and illustrations from *I Saw a Dinosaur* are copyright Rigby 2000. Used by permission.