

Table 1. Total Fixation Durations (in Seconds) on the Word A in Multiple Contexts

Word	Page	Cory	Esmeralda	Javier	Kimberly	Mac	Rashaun	Average
a	2	0.85	1.16	0	0	1.07	0	0.51
a	3	0	0.53	8.99	0.71	0.94	0	1.86
a	5	1.33	0.31	0	0	1.36	0	0.50
a1	6	0	2.59	0	0.52	0.58	0	0.61
a2	6	0.46	0	0	0.95	0.9	0	0.38
a	7	0.56	1.56	0	0.73	0	0	0.55
a	8	0.48	4.31	2.33	1.57	1.93	0.18	1.52
Total Duration		3.68	10.46	11.32	4.48	6.78	.18	6.02
Average		.52	1.49	1.61	.64	.95	.02	.86

ate function words than content words. On average for all readers, 82% of non-fixated words were function words. This is a common finding within eye movement research. Paulson (2000) found that his readers fixated 79% of the content words and just 46% of the function words. Just and Carpenter (1984) found that 74% of content words were fixated, while only 40% of function words were fixated.

Readers were also more likely to transition from print to pictures at content words. On average, 91% of all transitions from print to pictures were from content words.

EMMA analyses involved examining readers' oral miscues relative to eye fixations within the eye-voice span across the reading of the complete text. Eye-voice span refers to the phenomenon that readers' eye fixations are generally ahead of their voice as they read. EMMA analyses revealed that first-grade beginning readers in this study engaged in picture sampling prior to producing a miscue 86% of the time. Readers sampled from pictures prior to omissions 91% of the time. All readers fixated miscued words well beyond their personal average fixation duration prior to miscue production 94% of the time. Paulson (2000) reports similar findings. In cases where miscues were corrected, post-miscue fixations on the same word occurred 100% of the time. Readers also engaged in regressive eye movements, transitioned to pictures, or both, 100% of the time when miscues were corrected.

In cases where readers produced oral repetitions, regressive eye movements