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

<table>
<thead>
<tr>
<th>Word</th>
<th>Cory</th>
<th>Esmeralda</th>
<th>Javier</th>
<th>Kimberly</th>
<th>Mac</th>
<th>Rashaun</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>2</td>
<td>0.85</td>
<td>1.16</td>
<td>0</td>
<td>0.07</td>
<td>0</td>
<td>0.51</td>
</tr>
<tr>
<td>a</td>
<td>3</td>
<td>0</td>
<td>0.53</td>
<td>8.99</td>
<td>0.71</td>
<td>0.94</td>
<td>1.86</td>
</tr>
<tr>
<td>a</td>
<td>5</td>
<td>1.33</td>
<td>0.31</td>
<td>0</td>
<td>1.36</td>
<td>0</td>
<td>0.50</td>
</tr>
<tr>
<td>a1</td>
<td>6</td>
<td>0</td>
<td>2.59</td>
<td>0</td>
<td>0.52</td>
<td>0.58</td>
<td>0.61</td>
</tr>
<tr>
<td>a2</td>
<td>6</td>
<td>0.46</td>
<td>0</td>
<td>0</td>
<td>0.95</td>
<td>0.9</td>
<td>0.38</td>
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<tr>
<td>a</td>
<td>7</td>
<td>0.56</td>
<td>1.56</td>
<td>0</td>
<td>0.73</td>
<td>0</td>
<td>0.55</td>
</tr>
<tr>
<td>a</td>
<td>8</td>
<td>0.48</td>
<td>4.31</td>
<td>2.33</td>
<td>1.57</td>
<td>1.93</td>
<td>1.52</td>
</tr>
</tbody>
</table>

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 move-
ment research. Paulson (2000) found that his readers fixated 79% of the con-
tent 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 con-
tent 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