



### Impact of Intensive Summer Reading Intervention for Children with Reading Disabilities and Difficulties in Early Elementary School



Seeing Stars for Phonemic Awareness, Reading, and Spelling (SI)

#### PROFILE:

##### Number of Subjects:

- 23 Seeing Stars
- 24 Control

##### Age: 6-9

##### Program Implemented:

- Seeing Stars®

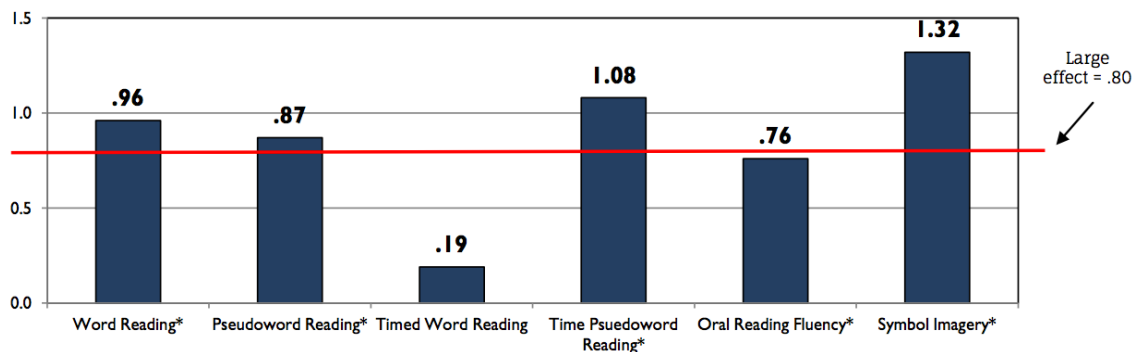
##### Outcome Measures:

- Woodcock Johnson Tests of Achievement-3rd (word identification and word attack)
- Test of Word Reading Efficiency-2nd (sight word efficiency and phonemic decoding efficiency)
- Dynamic Indicators of Basic Early Literacy Skills (oral reading fluency)
- Symbol Imagery Test

#### BACKGROUND:

The Massachusetts Institute of Technology (MIT) McGovern Institute for Brain Research and Department of Brain and Cognitive Sciences in collaboration with Lindamood-Bell Learning Processes conducted a randomized controlled trial involving young children with reading disabilities and difficulties. This experiment investigated the efficacy of the Seeing Stars program, which develops symbol imagery for reading. Children were randomly assigned to intervention (Seeing Stars) or non-intervention (control) groups. All children were pre- and on a battery of reading measures. Over a six-week period of time, children in the Seeing Stars group received between 100 and 120 hours of instruction that was delivered by specially trained Lindamood-Bell staff. Gains made by the Seeing Stars group were compared to gains made by the control group. Effect sizes, *d*, were calculated to determine the magnitude of the differences between the groups.

Effect Sizes



\*Statistically significant ( *p* ≤ .05).

#### RESULTS:

Large effects were realized on four of the six measures with oral reading fluency being near the large threshold, and statistical significance (*p* ≤ .05) favoring the Seeing Stars group was reached on five of the six measures. A very large effect size ( $\eta_p^2 = .60$ ) was realized on a composite across all measures, which was also significant (*p* ≤ .001) in favor of the Seeing Stars group. The results of this study illustrate that instruction in the Seeing Stars program supports the development of phonological and orthographic processing resulting in improvements in reading for children with reading disabilities and difficulties.

#### LOCATION:

McGovern Institute for Brain Research and Department of Brain and Cognitive Sciences, Massachusetts Institute of Technology, Cambridge, USA