LINDAMOOD-BELL

EST. 1986

LEARNING CENTER
RESULTS

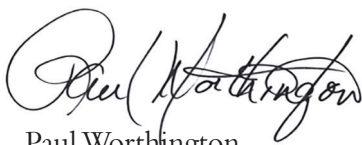## January 2008 – September 2021

Table of Contents

Introduction

Over the course of more than three decades, Lindamood-Bell has been honored to work with tens of thousands of children and adults. Through our founders' programs, our sensory-cognitive instructional methodologies, and evidence-based research findings, we offer a theoretically sound, brain-based literacy foundation for learning, helping our students achieve their full potential.

We serve a diverse population of students including struggling readers who are just starting to learn the phonetic and orthographic structure of English (sounds and letters) and those who are not comprehending what they read or hear. Our students are those who speak English as a second language, those who have been previously diagnosed with language-based disabilities including dyslexia, developmental delays, or autism, and those who simply have not been taught to read effectively in school. Our continued success in addressing the varied needs of these individuals is due to our comprehensive approach to individualized diagnoses and evidence-based research on sensory-cognitive instruction.

The enclosed data summary highlights the results of our internal accountability reporting on instruction at our Learning Centers and Lindamood-Bell Academy. As we address the needs of the individuals we serve, we continue to support and participate in neuroscientific studies of our founders' sensory-cognitive programs with various research universities. Our goal is to utilize this knowledge while continually improving upon state-of-the-science diagnosis and instruction toward literacy development, setting a standard for world-class literacy instruction.

Sincerely,

Paul Worthington
Director of Research and Development

Lindamood–Bell® Learning Centers

From the beginning of January 2008 to mid–September of 2021, Lindamood-Bell Learning Centers have assessed and provided for over 25,000 students in one or more of our sensory–cognitive programs (Seeing Stars, Visualizing and Verbalizing, On Cloud Nine, Talkies, and/or Lindamood Phoneme Sequencing).

Please Note: For the categorical reporting found herein, the numbers of students reported on is based on the number of students with a complete testing battery specific to the program of instruction being analyzed. The pie chart below disaggregates these students by predominant learning need(s) who have received a minimum of 40 hours of sensory–cognitive instruction.

Learning Focus of Instruction
†n = 25,049

- ■ Decoding
- ■ Decoding and Comprehension (combined)
- ■ Comprehension
- ■ Math

†There were 132 Talkies Only and 5 Lindamood Auditory Phoneme Sequencing Only students.
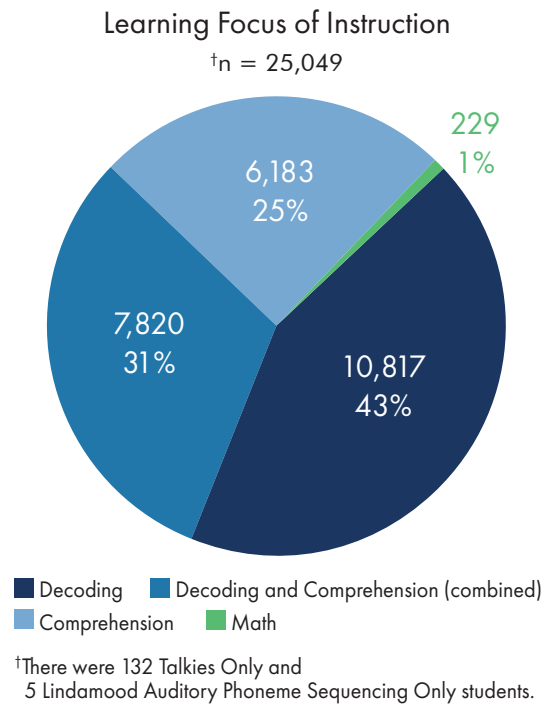
Student Profiles

The tables below show the distribution of the ages and grades of more than 25,000 students who received instruction at our Learning Centers from January 2008 to September 2021.

Ages of Our Students
n = 25,186

AGE	NUMBER OF STUDENTS
3-5	417
6	1,556
7	3,119
8	3,644
9	3,517
10	3,079
11	2,429
12	1,914
13	1,542
14	1,164
15	790
16	538
17	399
18-72	1,078

10,590 Female
15,503 Male

Grade Levels of Our Students
†n = 25,158

Grade Level	Number of Students
Pre-K–2nd	7,722
3rd–5th	9,639
6th–8th	4,903
9th–12th	2,060
College–Adult	834

†28 of the students were missing grade level data.
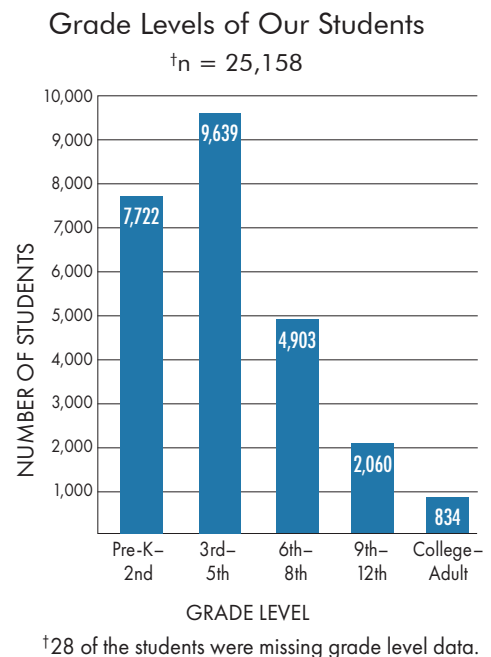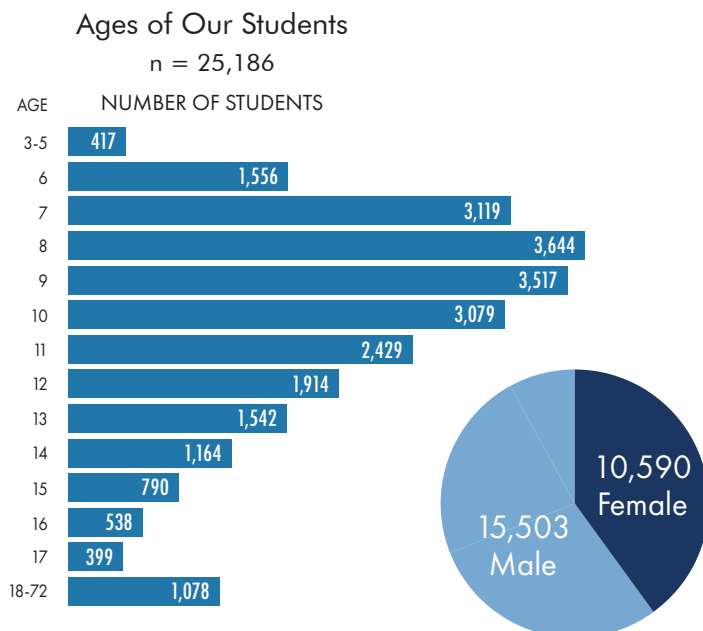
Learning Ability Evaluation

Each student receives a Learning Ability Evaluation to determine his or her areas of strength and weakness in reading, spelling, comprehension, and math.

Test	Task
Symbol Imagery	Image and manipulate orthographic and phonemic patterns
Phonemic Awareness	Perceive sounds in isolation and within words
Word Attack	Read a list of progressively difficult nonsense words
Word Recognition	Read a list of progressively difficult real words
Spelling	Spell a list of progressively difficult real words
Vocabulary	Select one picture from four that matches a spoken word
Word Opposites	Say the opposite of a verbally provided word
Math Computation	Solve problems from basic arithmetic fractions to basic algebra
Math Story Problems	Read and solve simple to complex story problems that require computation
Paragraph Reading Rate, Accuracy, and Fluency	Read paragraphs aloud

Percentiles

One of the most common ways test publishers provide results is through the use of percentiles. A percentile score is a ranking (1 to 99) among people of the same age range. For example, if a student scores at the 75th percentile, he or she scores as well or better than 75% of people the same age. The following can be used to interpret percentiles:

Percentiles	Range	Definition
Below 25th	Below Normal	Weakness
25th – 36th	Within Normal	Moderate Difficulty
37th – 62nd	Within Normal	Adequate Ability
63rd – 74th	Within Normal	Ease
At or above 75th	Above Normal	Strength

Standard scores (see Standard Scores below) are averaged and converted to percentiles based on a normal distribution of a given age of the population. For example, an average standard score of 100 for a group of students is equivalent to the 50th percentile.

Standard Scores

A standard score is a raw score that has been transformed to a common scale (mean of 100 and standard deviation of 15) so growth comparisons can be made. Standard score changes are used to determine the magnitude of change from pre– to retest. Student growth is determined by measuring the difference between pre– and post assessments, yielding a standard score change. While there is no definitive interpretation, researchers generally agree that a standard score change of practical significance ranges from 3.0 to 4.5 points.

Average Standard Score Changes

Small   Medium   Large
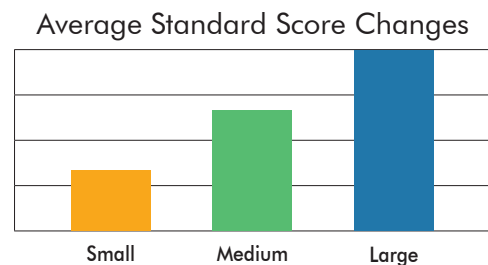
Analyzing Learning Progress

Pre– to retest results that are deemed statistically significant ($p < .0001$), not due to chance, are noted with an asterisk. For accurate psychometric comparative analysis, paired *t* tests are performed on standard scores.

Students with Prior Learning Profile Identifications

Overall, approximately 45% of Lindamood-Bell students reported having received a learning profile identification prior to Lindamood-Bell instruction.

- Attention Deficit Hyperactivity Disorder
- Multiple Diagnoses
- Dyslexia
- Specific Learning Disability
- Autism Spectrum Disorder
- Speech or Language Impairment
- Central Auditory Processing Disorder
- Hyperlexia

Number and Percentage of Students by Specific Prior Diagnosis(es)
n = 11,468

Diagnosis	Number	Percentage
ATTENTION DEFICIT HYPERACTIVITY DISORDER (ADHD)	6,392	25%
MULTIPLE DIAGNOSES	5,134	20%
DYSLEXIA	4,592	18%
SPECIFIC LEARNING DISABILITY	2,382	9%
AUTISM SPECTRUM DISORDER	2,043	8%
SPEECH OR LANGUAGE IMPAIRMENT	1,938	8%
CENTRAL AUDITORY PROCESSING DISORDER	1,857	7%
HYPERLEXIA	117	1%

Note: The 11,468 students are out of the 25,186 students with over forty hours of Lindamood-Bell instruction in one or more of our sensory-cognitive programs.

55% of students did not have a diagnosis prior to their Lindamood-Bell instruction. However, many of those students meet the criteria for language-based disabilities.

Many individuals have sought help from their school districts and other reading instruction providers before seeking help from Lindamood–Bell. Individuals who reported...

- Receiving special education and/or on a 504 plan: 37%
- Receiving speech therapy: 33%
- Receiving remedial reading help at school: 27%
- Repeating a grade: 9%
- Being identified as gifted: 5%

Decoding

Results of Students Who Received Decoding Instruction Only

Pre- and Retest Percentiles

Measure	Pre	Retest
Symbol Imagery*	23	58
Phonemic Awareness*	30	55
Word Attack*	23	55
Word Recognition*	23	45
Accuracy*	6	19
Fluency*	6	14
Written Language Comprehension*	32	53
Vocabulary*	68	75

*Statistically significant (p < .0001)   ■ Pre   ■ Retest

Average Standard Score Changes

Measure	Change
Symbol Imagery	14.9
Phonemic Awareness	10.4
Word Attack	12.9
Word Recognition	9.0
Accuracy	9.7
Fluency	7.5
Written Language Comprehension	8.4
Vocabulary	2.3

Magnitude of Change   ■ Small (up to 3.0)   ■ Medium (3.0-4.5)   ■ Large (above 4.5)

Summary

Lindamood-Bell Instruction Implemented:
Seeing Stars

Years:
Jan. 2008 – Sept. 2021

Number of Students:
9,598

Average Age:
9.2

Average Instruction Hours:
109.9

Results: On average, students who received Seeing Stars® instruction for decoding issues achieved significant improvements in reading. Our Decoding Only student population represents about 43% of the total Learning Center population. They made large (statistically significant) standard score changes on all measures. Vocabulary was not a targeted measure of instruction. Additionally, the 22-point percentile increase in Word Recognition put these students within the normal range (25th–75th percentile). While the largest average standard score change can be seen on the Symbol Imagery (orthographic processing) measure, it is important to note the large average standard score change in Written Language Comprehension. After an average of 109.9 hours of instruction, student scores in Written Language Comprehension grew to match Vocabulary performance more closely, where students averaged in the 68th percentile at pretest and the 75th percentile at retest.

Comprehension

Results of Students Who Received Comprehension Instruction Only
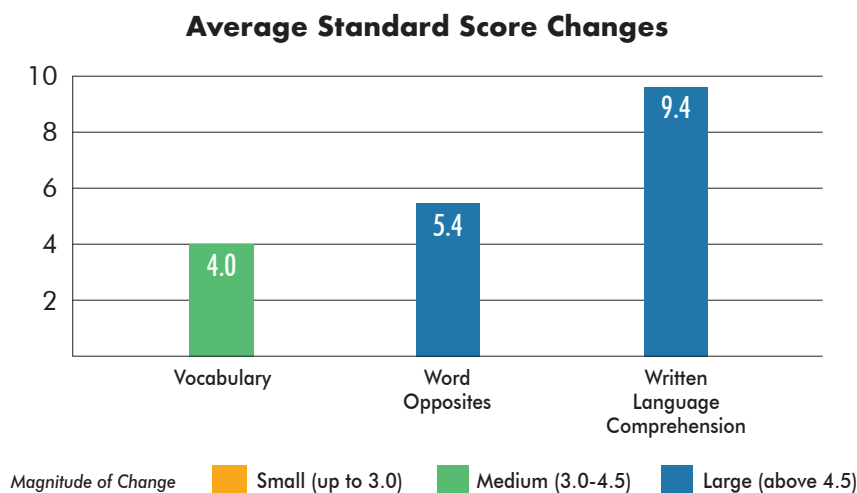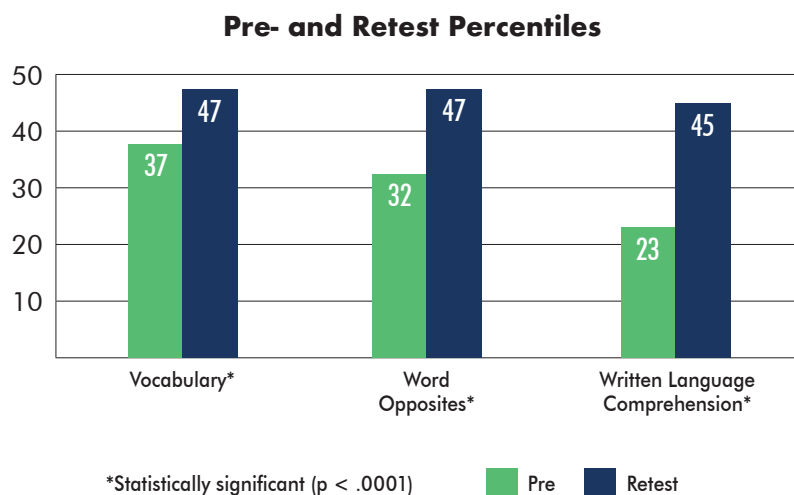
Pre- and Retest Percentiles

Measure	Pre	Retest
Vocabulary*	37	47
Word Opposites*	32	47
Written Language Comprehension*	23	45

*Statistically significant (p < .0001) ▮ Pre ▮ Retest

Average Standard Score Changes

Measure	Change
Vocabulary	4.0
Word Opposites	5.4
Written Language Comprehension	9.4

Magnitude of Change ▮ Small (up to 3.0) ▮ Medium (3.0-4.5) ▮ Large (above 4.5)

Summary

Lindamood–Bell Instruction Implemented:
Visualizing and Verbalizing

Years:
Jan. 2008 – Sept. 2021

Number of Students:
5,882

Average Age:
12.4

Average Instruction Hours:
102.9

Results: On average, students who received Visualizing and Verbalizing® instruction achieved significant improvements in areas associated with language comprehension. Our Comprehension Only student population represents about 25% of our total Learning Center population. They made large (statistically significant) standard score changes on two of the three measures. Additionally, the 22-point percentile increase in Written Language Comprehension puts these students well within the normal range (25th– 75th percentile).

Decoding & Comprehension (Combined)

Results of Students Who Received Both Decoding and Comprehension Instruction
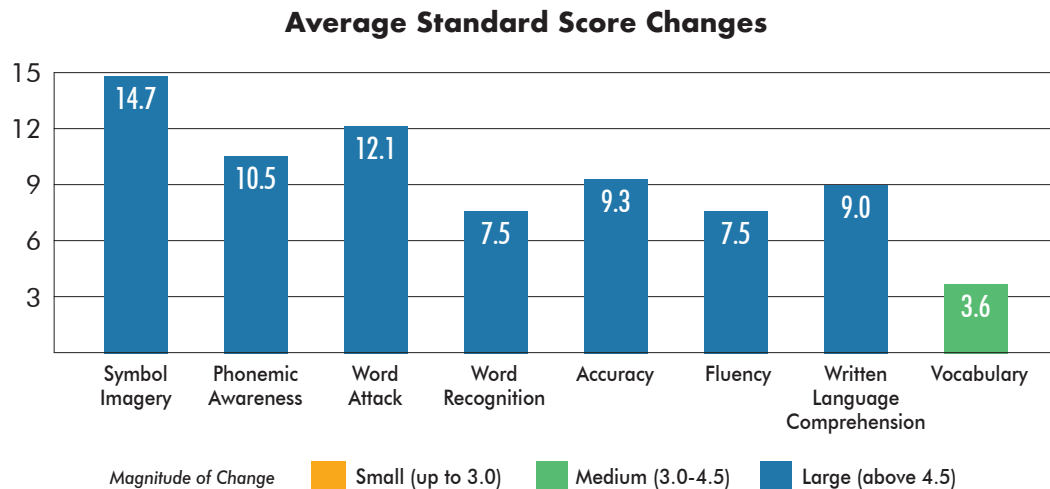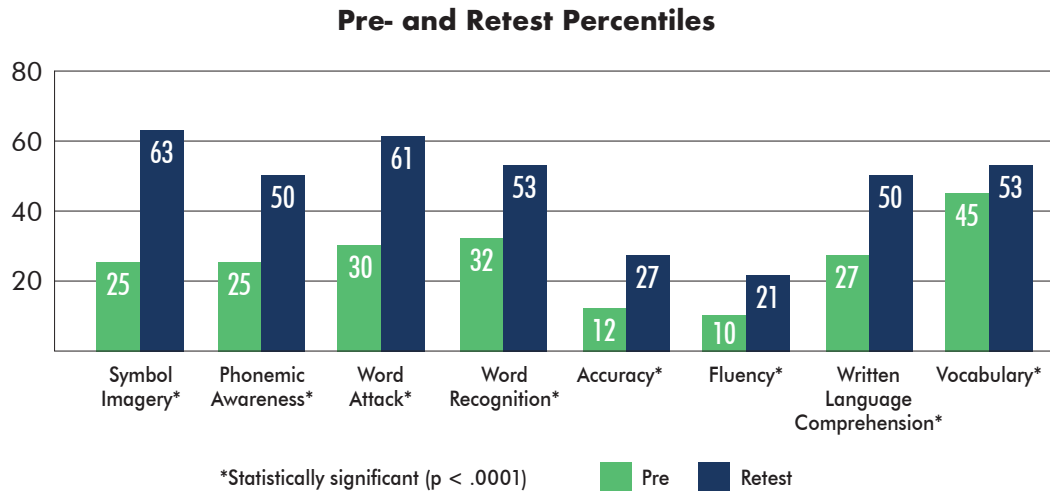
Pre- and Retest Percentiles

Measure	Pre	Retest
Symbol Imagery*	25	63
Phonemic Awareness*	25	50
Word Attack*	30	61
Word Recognition*	32	53
Accuracy*	12	27
Fluency*	10	21
Written Language Comprehension*	27	50
Vocabulary*	45	53

*Statistically significant (p < .0001)   Pre   Retest

Average Standard Score Changes

Measure	Change
Symbol Imagery	14.7
Phonemic Awareness	10.5
Word Attack	12.1
Word Recognition	7.5
Accuracy	9.3
Fluency	7.5
Written Language Comprehension	9.0
Vocabulary	3.6

Magnitude of Change   Small (up to 3.0)   Medium (3.0-4.5)   Large (above 4.5)

Summary

Lindamood-Bell Instruction Implemented: Seeing Stars and Visualizing and Verbalizing

Years: Jan. 2008 – Sept. 2021

Number of Students: 7,085

Average Age: 11.3

Average Instruction Hours: 144.0

Results: On average, students who received Seeing Stars combined with Visualizing and Verbalizing instruction achieved significant improvements in decoding and comprehension. Our combined focus student population represents about 31% of our total Learning Center population. They made large (statistically significant) standard score changes on seven of nine measures. Although the large average standard score gain on the Word Recognition measure is notable, it is equally if not more important to note the large average standard score gains in Paragraph Reading Accuracy and Written Language Comprehension.

Math Focus

Results of Students Who Received Primary Instruction in Mathematics

Pre- and Retest Percentiles

*Statistically significant (p < .0001)   Pre   Retest

Average Standard Score Changes

Magnitude of Change   Small (up to 3.0)   Medium (3.0-4.5)   Large (above 4.5)
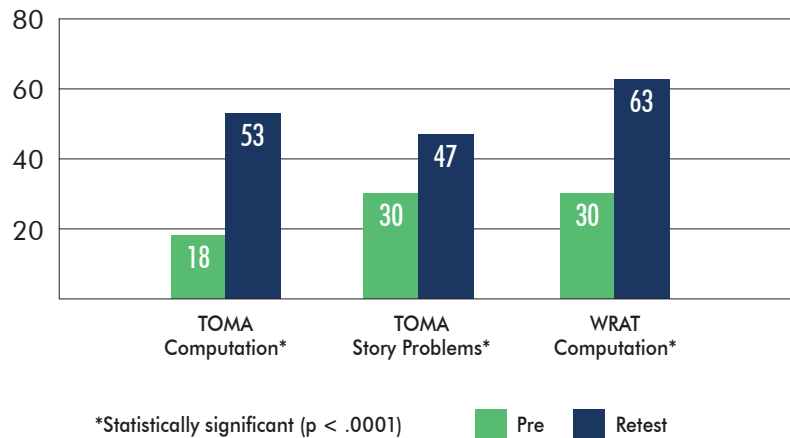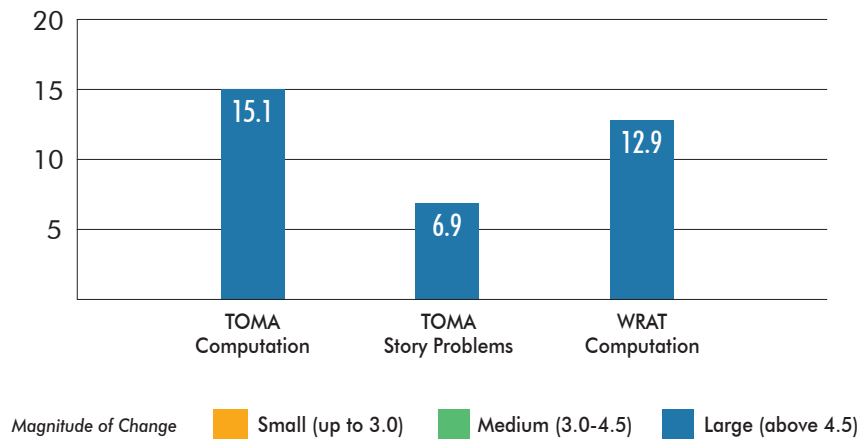
Summary

Lindamood–Bell Instruction Implemented:
On Cloud Nine Math

Years:
Jan. 2008 – Sept. 2021

Number of Students:
203

Average Age:
10.6

Average Instruction Hours:
78.5

Results: On average, students who received all or most of their instruction in On Cloud Nine Math achieved significant improvements in math. They made large (statistically significant) standard score changes on all mathematics subtests. The 35-point percentile increase in TOMA Computation puts these students within the normal range (25th–75th percentile). (Of the 203 students, the TOMA Computation subtest was computed out of 141 students and the TOMA Story Problems subtest computed out of 148 students as a result of missing pre- or retest data.)

Math & Comprehension Focus

Results of Students Who Received At Least 20 hours of Comprehension Instruction and Any Math Instruction

Pre- and Retest Percentiles
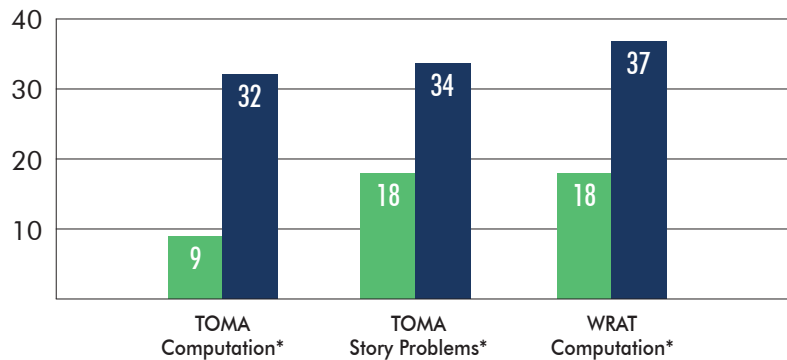
Subtest	Pre	Retest
TOMA Computation*	9	32
TOMA Story Problems*	18	34
WRAT Computation*	18	37

*Statistically significant (p < .0001)   ■ Pre   ■ Retest

Average Standard Score Changes

Subtest	Change
TOMA Computation	13.0
TOMA Story Problems	7.5
WRAT Computation	9.6
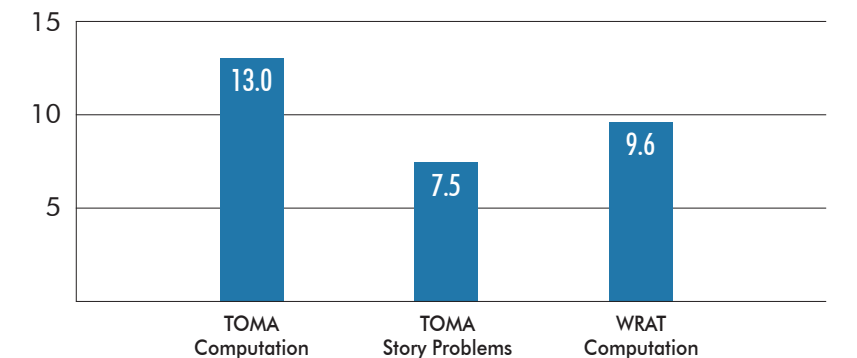
Magnitude of Change   ■ Small (up to 3.0)   ■ Medium (3.0-4.5)   ■ Large (above 4.5)

Summary

Lindamood-Bell Instruction Implemented:
Visualizing and Verbalizing and On Cloud Nine Math

Years:
Jan. 2008 – Sept. 2021

Number of Students:
569

Average Age:
12.0

Average Instruction Hours:
217.8

Results: On average, students who received instruction in Visualizing and Verbalizing and On Cloud Nine Math achieved significant improvements in math. They made large (statistically significant) standard score changes on all measures. The 26-point percentile increase in Comprehension (not graphed) and significant growth in Computation puts these students within the normal range (25th–75th percentile). (Of the 569 students, the TOMA Computation subtest was computed out of 220 students and the TOMA Story Problems subtest out of 218 students, as a result of missing pre- or retest data.)

Attention Deficit Hyperactivity Disorder (ADHD)

Students with a Prior ADHD Diagnosis Who Received Decoding Instruction Only

Pre- and Retest Percentiles

Measure	Pre	Retest
Symbol Imagery*	16	50
Phonemic Awareness*	23	50
Word Attack*	18	47
Word Recognition*	18	37
Accuracy*	5	14
Fluency*	4	10
Written Language Comprehension*	27	47
Vocabulary*	63	70

*Statistically significant (p < .0001)   ■ Pre   ■ Retest

Average Standard Score Changes

Measure	Value
Symbol Imagery	14.8
Phonemic Awareness	10.6
Word Attack	13.0
Word Recognition	8.8
Accuracy	9.7
Fluency	7.4
Written Language Comprehension	7.7
Vocabulary	2.5

Magnitude of Change   ■ Small (up to 3.0)   ■ Medium (3.0-4.5)   ■ Large (above 4.5)
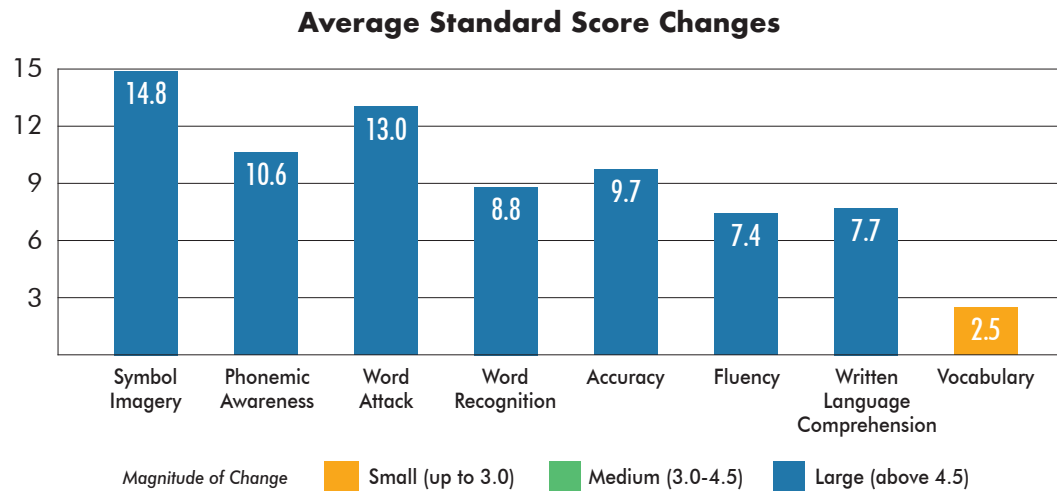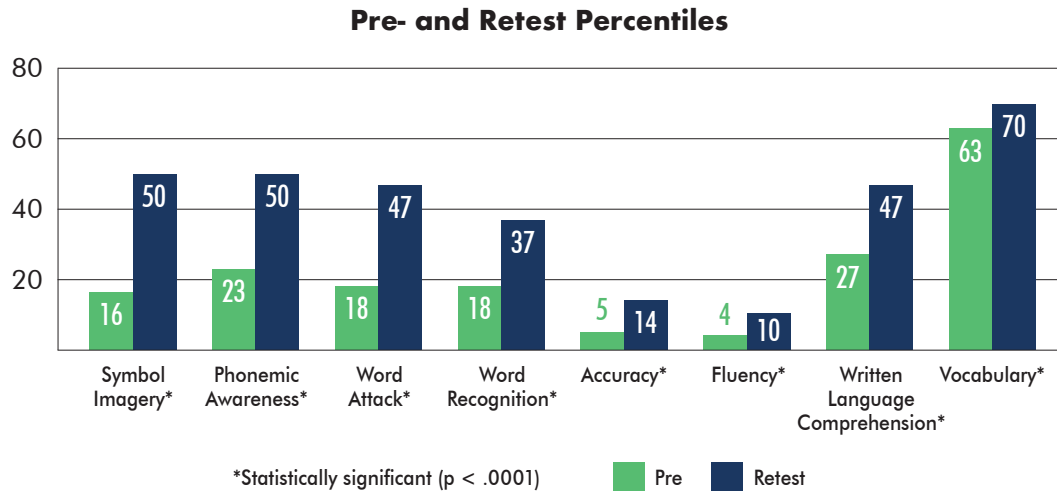
Summary

Lindamood-Bell Instruction Implemented:
Seeing Stars

Years:
Jan. 2008 – Sept. 2021

Number of Students:
2,008

Average Age:
10.2

Average Instruction Hours:
120.6

Results: On average, students with a prior ADHD diagnosis with decoding difficulties who received Seeing Stars instruction achieved significant improvements in reading. They made large (statistically significant) standard score changes on all measures. Vocabulary was not a targeted measure of instruction. Additionally, the 19-point percentile increase in Word Recognition and a 20-point percentile increase in Written Language Comprehension puts these students within the normal range (25th–75th percentile).

Attention Deficit Hyperactivity Disorder (ADHD)

Students with a Prior ADHD Diagnosis Who Received Comprehension Instruction Only

Pre- and Retest Percentiles

Measure	Pre	Retest
Vocabulary*	39	50
Word Opposites*	34	47
Written Language Comprehension*	23	45

*Statistically significant (p < .0001)   Pre   Retest

Average Standard Score Changes

Measure	Change
Vocabulary	4.2
Word Opposites	5.0
Written Language Comprehension	8.8

Magnitude of Change   Small (up to 3.0)   Medium (3.0-4.5)   Large (above 4.5)
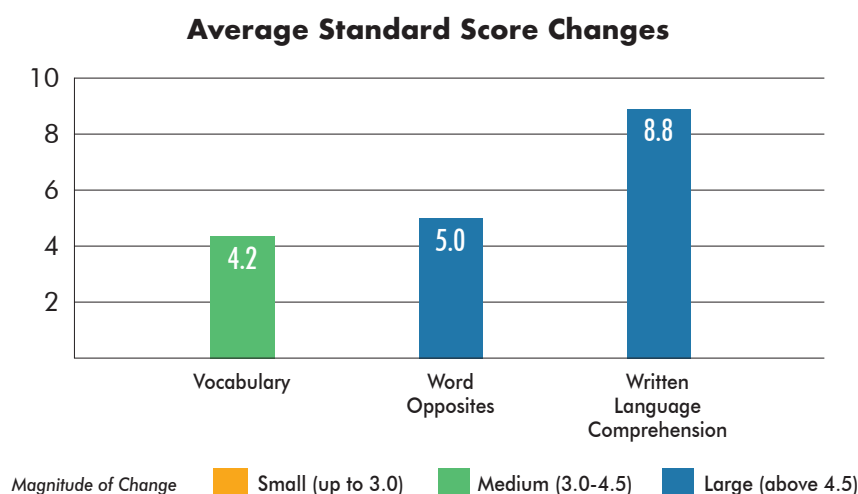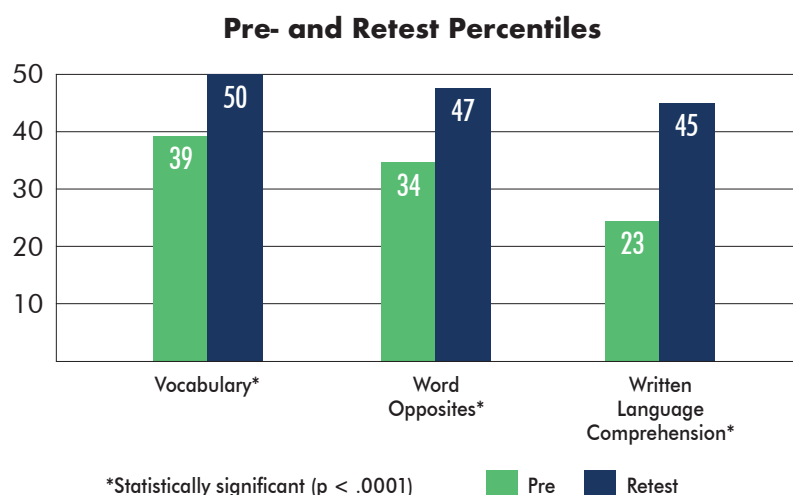
Summary

Lindamood-Bell Instruction Implemented:
Visualizing and Verbalizing

Years:
Jan. 2008 – Sept. 2021

Number of Students:
1,498

Average Age:
12.8

Average Instruction Hours:
107.2

Results: On average, students with a prior ADHD diagnosis with language comprehension difficulties who received Visualizing and Verbalizing instruction achieved significant improvements in comprehension. They made large (statistically significant) standard score changes on two of the three measures. Additionally, the 22-point percentile increase in Written Language Comprehension put these students within the normal range (25th–75th percentile).

Attention Deficit Hyperactivity Disorder (ADHD)

Students with a Prior ADHD Diagnosis Who Received Decoding and Comprehension (Combined) Instruction

Pre- and Retest Percentiles
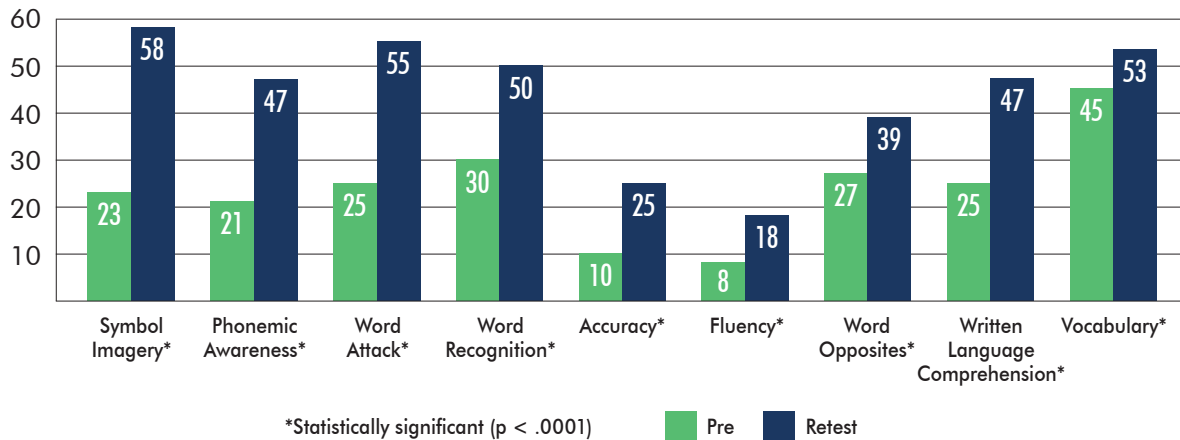
Measure	Pre	Retest
Symbol Imagery*	23	58
Phonemic Awareness*	21	47
Word Attack*	25	55
Word Recognition*	30	50
Accuracy*	10	25
Fluency*	8	18
Word Opposites*	27	39
Written Language Comprehension*	25	47
Vocabulary*	45	53

*Statistically significant (p < .0001)   ■ Pre   ■ Retest

Average Standard Score Changes

Measure	Value
Symbol Imagery	14.2
Phonemic Awareness	10.7
Word Attack	12.4
Word Recognition	7.3
Accuracy	9.4
Fluency	7.5
Word Opposites*	5.6
Written Language Comprehension	8.6
Vocabulary	3.6

Magnitude of Change   ■ Small (up to 3.0)   ■ Medium (3.0-4.5)   ■ Large (above 4.5)

Summary

Lindamood–Bell Instruction Implemented:
Seeing Stars and Visualizing and Verbalizing
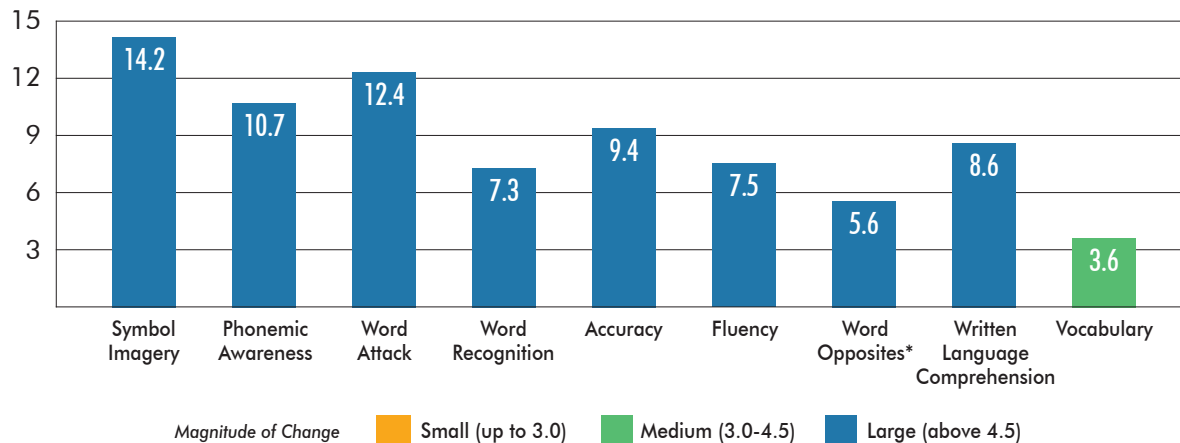
Years:
Jan. 2008 – Sept. 2021

Number of Students:
1,875

Average Age:
11.6

Average Instruction Hours:
150.6

Results: Students with a prior ADHD diagnosis, who had both decoding and language comprehension difficulties, received both Seeing Stars and Visualizing and Verbalizing instruction. These students achieved significant improvements in decoding and comprehension. They made large (statistically significant) standard score changes on eight of nine measures. Additionally, the 20-point percentile increase in Word Recognition and 22-point percentile increase in Written Language Comprehension puts these students well within the normal range (25th–75th percentile).

Dyslexia

Students with a Prior Dyslexia Diagnosis Who Received Decoding Instruction Only

Pre- and Retest Percentiles

Measure	Pre	Retest
Symbol Imagery*	19	55
Phonemic Awareness*	27	55
Word Attack*	19	50
Word Recognition*	19	39
Spelling*	16	23
Accuracy*	5	16
Fluency*	4	12
Written Language Comprehension*	34	53
Vocabulary*	70	75

*Statistically significant (p < .0001) ■ Pre ■ Retest

Average Standard Score Changes

Measure	Change
Symbol Imagery	14.9
Phonemic Awareness	10.8
Word Attack	13.2
Word Recognition	9.4
Spelling	3.7
Accuracy	9.9
Fluency	7.5
Written Language Comprehension	7.8
Vocabulary	2.2

Magnitude of Change ■ Small (up to 3.0) ■ Medium (3.0-4.5) ■ Large (above 4.5)

Summary

Lindamood-Bell Instruction Implemented:
Seeing Stars

Years:
Jan. 2008 – Sept. 2021

Number of Students:
2,483

Average Age:
10.2

Average Instruction Hours:
121.6

Results: On average, students with a prior Dyslexia diagnosis who received Seeing Stars instruction achieved significant improvements in reading. They made large (statistically significant) standard score changes on seven of nine measures. (Vocabulary was not a targeted measure of instruction.) The 20-point percentile increase in Word Recognition put these students well within the normal range (25th–75th percentile). The large average standard score change in Paragraph Reading Accuracy should also be noted.

Dyslexia

Students with a Prior Dyslexia Diagnosis
Who Received Comprehension Instruction Only

Pre- and Retest Percentiles

	Pre	Retest
Symbol Imagery*	55	68
Phonemic Awareness*	42	55
Word Attack*	55	66
Word Recognition*	58	63
Spelling*	55	55
Accuracy*	37	45
Fluency*	32	39
Written Language Comprehension*	27	50
Vocabulary*	42	53
Word Opposites*	34	47

*Statistically significant (p < .0001)   ■ Pre   ■ Retest

Average Standard Score Changes

Measure	Change
Symbol Imagery	5.1
Phonemic Awareness	5.3
Word Attack	4.2
Word Recognition	1.5
Spelling	0.6
Accuracy	3.5
Fluency	3.6
Written Language Comprehension	8.2
Vocabulary	4.1
Word Opposites	4.5

Magnitude of Change   ■ Small (up to 3.0)   ■ Medium (3.0-4.5)   ■ Large (above 4.5)
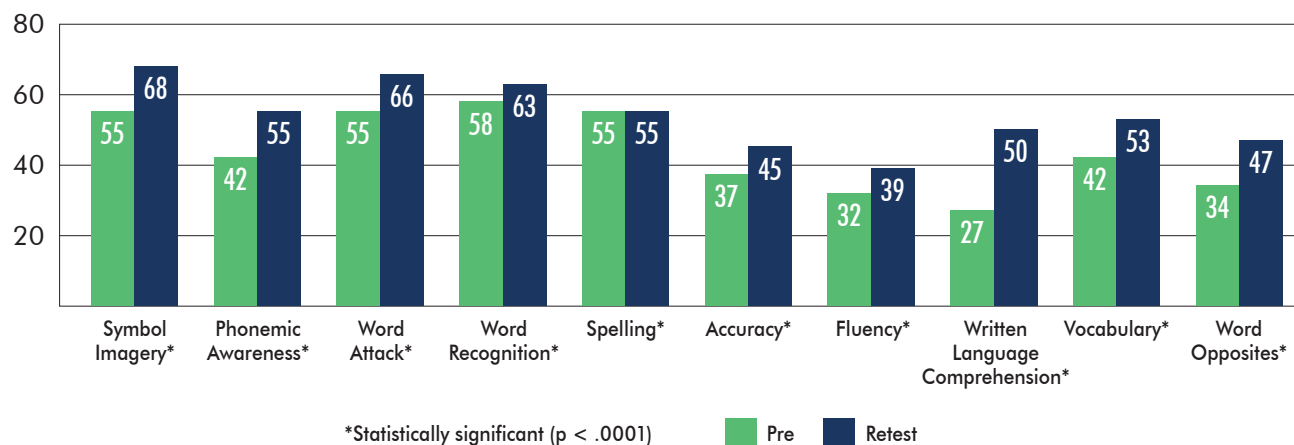
Summary

Lindamood–Bell Instruction Implemented:
Visualizing and Verbalizing

Years:
Jan. 2008 – Sept. 2021
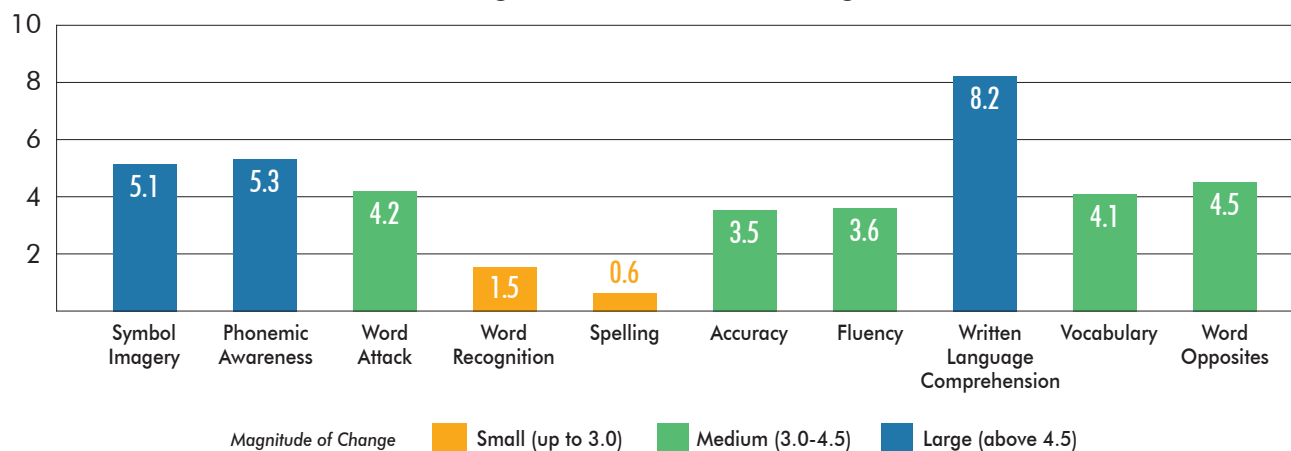
Number of Students:
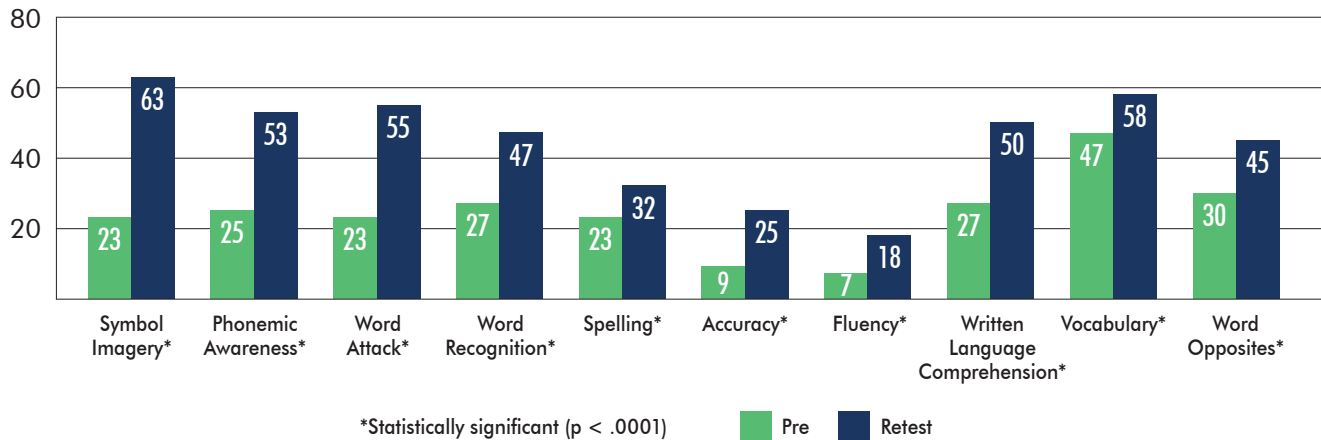284

Average Age:
12.9

Average Instruction Hours:
103.4

Results: The students in this subset all had previous diagnoses of dyslexia, yet on average they scored at pretest within the normal range on all decoding measures. In Written Language Comprehension, these students scored on average within the low–normal range (27th percentile), suggesting greater difficulty with comprehension than with decoding, and possibly suggesting misdiagnosis. After an average of 103.4 hours of Visualizing and Verbalizing instruction, these students saw average growth of 20 percentile points in Written Language Comprehension. They also made medium growth in Reading Accuracy and Vocabulary.
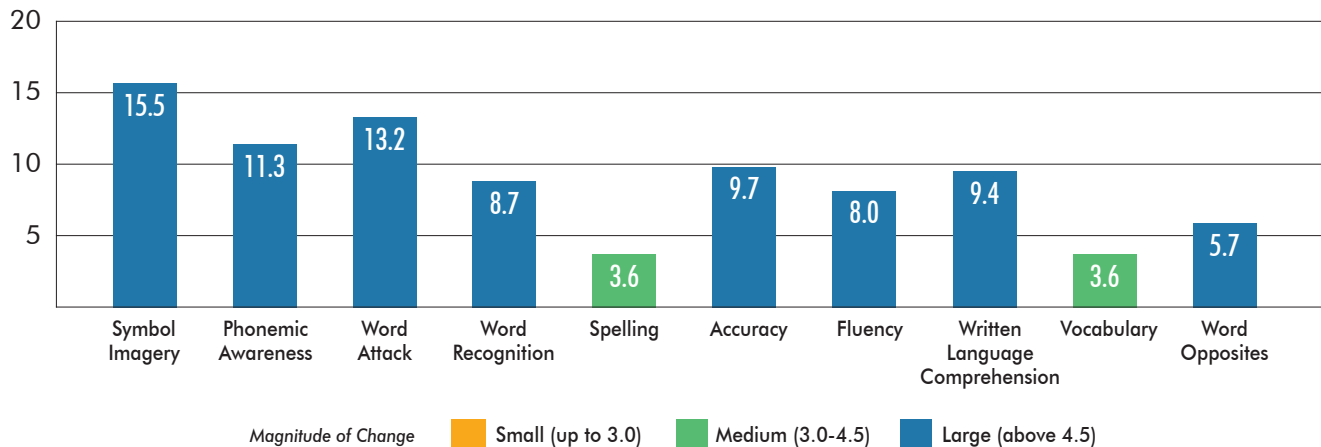
Dyslexia

Students with a Prior Dyslexia Diagnosis
Who Received Both Decoding and Comprehension Instruction

Pre- and Retest Percentiles

Measure	Pre	Retest
Symbol Imagery*	23	63
Phonemic Awareness*	25	53
Word Attack*	23	55
Word Recognition*	27	47
Spelling*	23	32
Accuracy*	9	25
Fluency*	7	18
Written Language Comprehension*	27	50
Vocabulary*	47	58
Word Opposites*	30	45

*Statistically significant (p < .0001)   Pre   Retest

Average Standard Score Changes

Measure	Change
Symbol Imagery	15.5
Phonemic Awareness	11.3
Word Attack	13.2
Word Recognition	8.7
Spelling	3.6
Accuracy	9.7
Fluency	8.0
Written Language Comprehension	9.4
Vocabulary	3.6
Word Opposites	5.7

Magnitude of Change   Small (up to 3.0)   Medium (3.0-4.5)   Large (above 4.5)

Summary

Lindamood–Bell Instruction Implemented:
Seeing Stars and Visualizing and Verbalizing

Years:
Jan. 2008 – Sept. 2021

Number of Students:
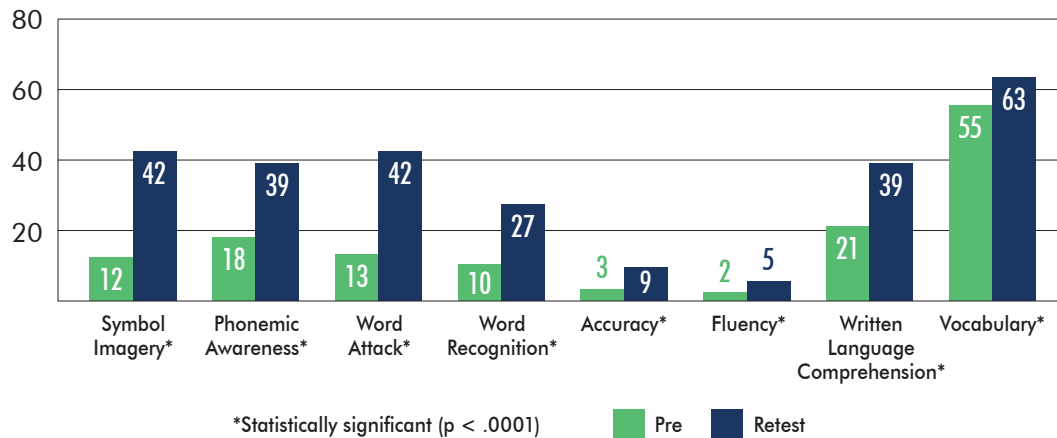1,399

Average Age:
12.3

Average Instruction Hours:
156.2

Results: On average, students with a prior Dyslexia diagnosis who received both Seeing Stars and Visualizing and Verbalizing instruction achieved significant improvements in reading. They made large (statistically significant) standard score changes on eight of the ten measures. The 20-point percentile increase in Word Recognition put these students well within the normal range (25th–75th percentile). The large average standard score change in Reading Accuracy should also be noted.
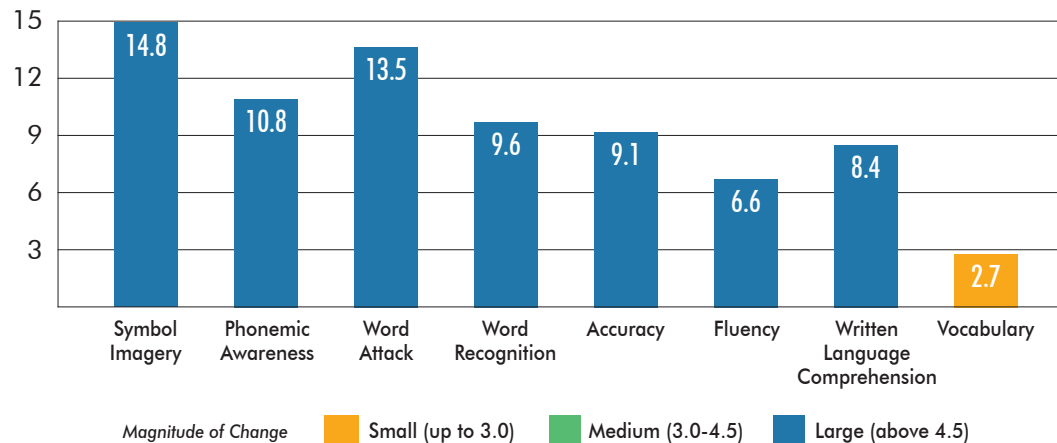
Specific Learning Disability (SLD)

Students with a Prior SLD Diagnosis
Who Received Decoding Instruction Only

Pre- and Retest Percentiles

Measure	Pre	Retest
Symbol Imagery*	12	42
Phonemic Awareness*	18	39
Word Attack*	13	42
Word Recognition*	10	27
Accuracy*	3	9
Fluency*	2	5
Written Language Comprehension*	21	39
Vocabulary*	55	63

*Statistically significant (p < .0001)   ■ Pre   ■ Retest

Average Standard Score Changes

Measure	Value
Symbol Imagery	14.8
Phonemic Awareness	10.8
Word Attack	13.5
Word Recognition	9.6
Accuracy	9.1
Fluency	6.6
Written Language Comprehension	8.4
Vocabulary	2.7

Magnitude of Change   ■ Small (up to 3.0)   ■ Medium (3.0-4.5)   ■ Large (above 4.5)

Summary

Lindamood-Bell Instruction Implemented:
Seeing Stars

Years:
Jan. 2008 – Sept. 2021
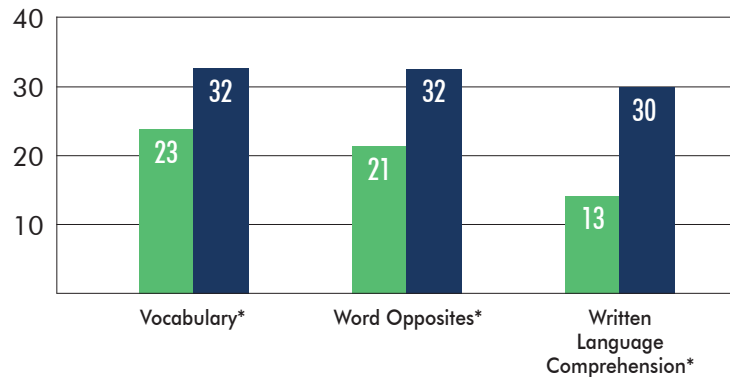
Number of Students:
846

Average Age:
10.6

Average Instruction Hours:
125.8

Results: On average, students with a prior SLD diagnosis who received Seeing Stars instruction achieved significant improvements in reading. They made large (statistically significant) standard score changes on all measures. Vocabulary was not a targeted measure of instruction. Additionally, the 17-point percentile increase in Word Recognition and the 18-point increase in Written Language Comprehension puts these students within the normal range (25th–75th percentile). Their pre- to posttest results were statistically significant on all measures.

Specific Learning Disability (SLD)

Students with a Prior SLD Diagnosis
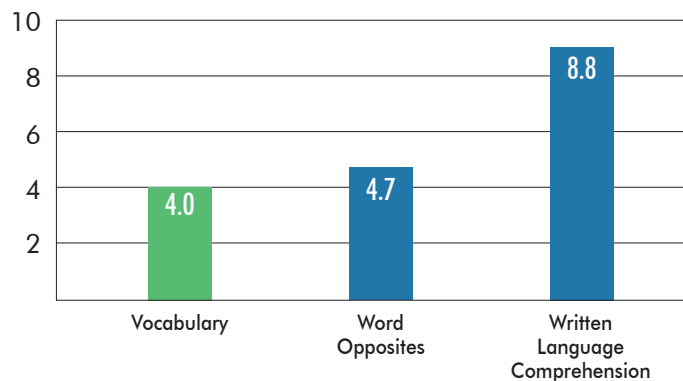## Who Received Comprehension Instruction Only

Pre- and Retest Percentiles

Vocabulary*: Pre 23, Retest 32
Word Opposites*: Pre 21, Retest 32
Written Language Comprehension*: Pre 13, Retest 30

*Statistically significant (p < .0001) ■ Pre ■ Retest

Average Standard Score Changes

Vocabulary: 4.0
Word Opposites: 4.7
Written Language Comprehension: 8.8

Magnitude of Change ■ Small (up to 3.0) ■ Medium (3.0-4.5) ■ Large (above 4.5)

Summary

Lindamood–Bell Instruction Implemented:
Visualizing and Verbalizing

Years:
Jan. 2008 – Sept. 2021

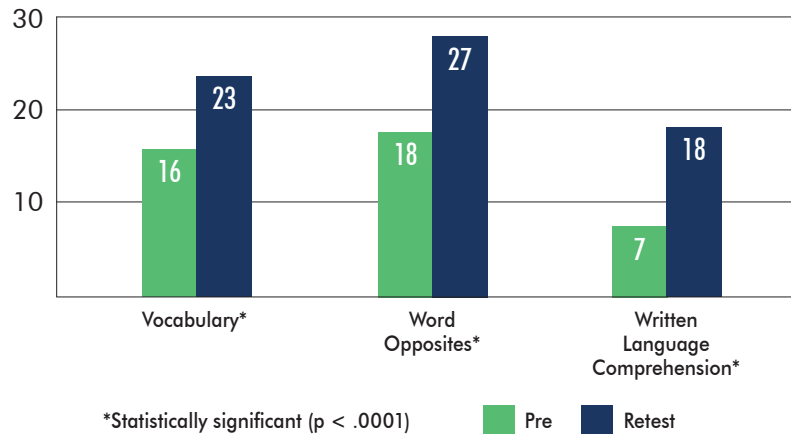**Number of Students:**
396

Average Age:
13.8

Average Instruction Hours:
114.8

Results: On average, students with a prior SLD diagnosis who received Visualizing and Verbalizing instruction achieved significant improvements in comprehension. They made large (statistically significant) standard score changes on all measures. Additionally, the 17-point percentile increase in Written Language Comprehension puts these students within the normal range (25th–75th percentile).
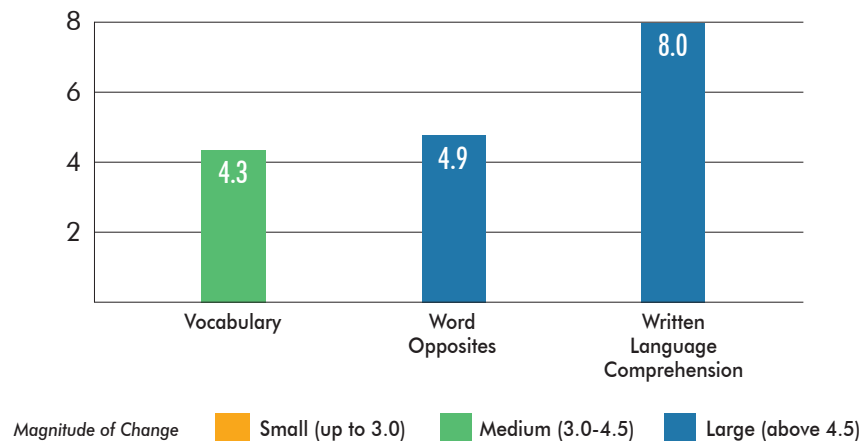
Autism Spectrum Disorder (ASD)

Students with a Prior ASD Diagnosis
Who Received Comprehension Instruction Only

Pre- and Retest Percentiles

	Pre	Retest
Vocabulary*	16	23
Word Opposites*	18	27
Written Language Comprehension*	7	18

*Statistically significant (p < .0001)

Average Standard Score Changes

Vocabulary	4.3
Word Opposites	4.9
Written Language Comprehension	8.0

Magnitude of Change — Small (up to 3.0) — Medium (3.0-4.5) — Large (above 4.5)

Summary

Lindamood-Bell Instruction Implemented:
Visualizing and Verbalizing

Years:
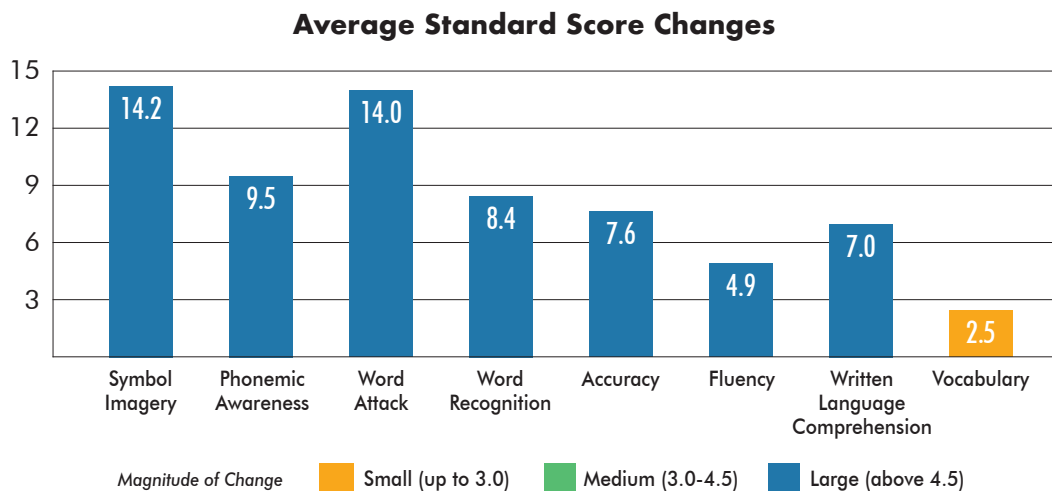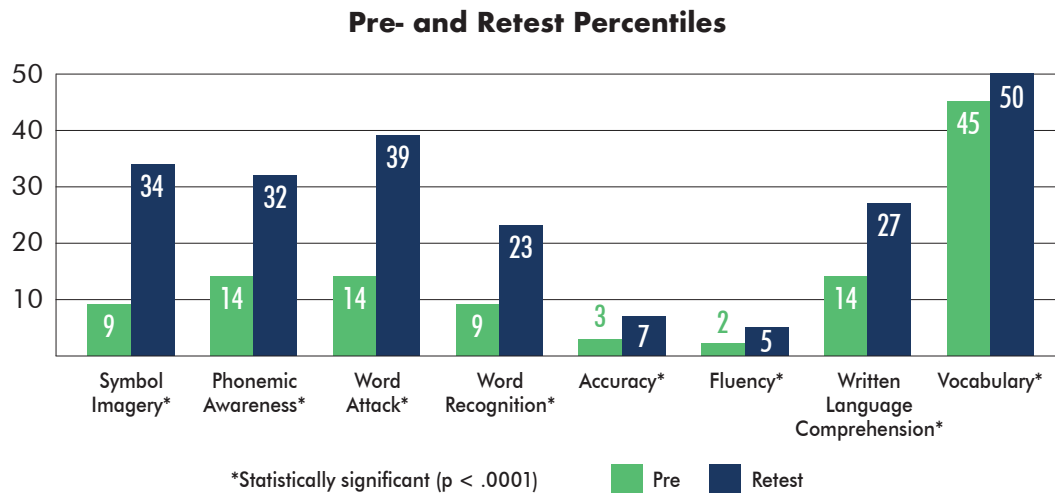Jan. 2008 – Sept. 2021

Number of Students:
938

Average Age:
12.0

Average Instruction Hours:
131.5

Results: On average, students with a prior ASD diagnosis who received Visualizing and Verbalizing instruction achieved significant improvements in comprehension, a major deficit for many students with ASD. They made large (statistically significant) standard score changes on two of the three measures.

Speech or Language Impairment (SLI)

Results of Students with a Prior SLI Diagnosis Who Received Decoding Instruction Only

Pre- and Retest Percentiles

Measure	Pre	Retest
Symbol Imagery*	9	34
Phonemic Awareness*	14	32
Word Attack*	14	39
Word Recognition*	9	23
Accuracy*	3	7
Fluency*	2	5
Written Language Comprehension*	14	27
Vocabulary*	45	50

*Statistically significant (p < .0001)   ■ Pre   ■ Retest

Average Standard Score Changes

Measure	Change
Symbol Imagery	14.2
Phonemic Awareness	9.5
Word Attack	14.0
Word Recognition	8.4
Accuracy	7.6
Fluency	4.9
Written Language Comprehension	7.0
Vocabulary	2.5

Magnitude of Change   ■ Small (up to 3.0)   ■ Medium (3.0-4.5)   ■ Large (above 4.5)

Summary

Lindamood–Bell Instruction Implemented:
Seeing Stars

Years:
Jan. 2008 – Sept. 2021

Number of Students:
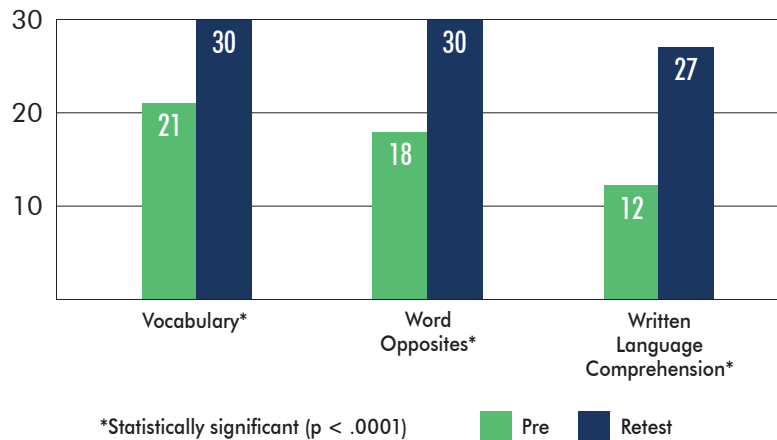471

Average Age:
10.2

Average Instruction Hours:
131.5

Results: On average, students with prior SLI diagnoses with decoding difficulties who received Seeing Stars instruction achieved significant improvements in reading. They made large (statistically significant) standard score changes on all measures. Vocabulary was not a targeted measure of instruction. Additionally, the significant increases in Symbol Imagery (orthographic processing), Word Attack, and Word Recognition led to gains in Written Language Comprehension that entered the normal range (25th-75th percentile).
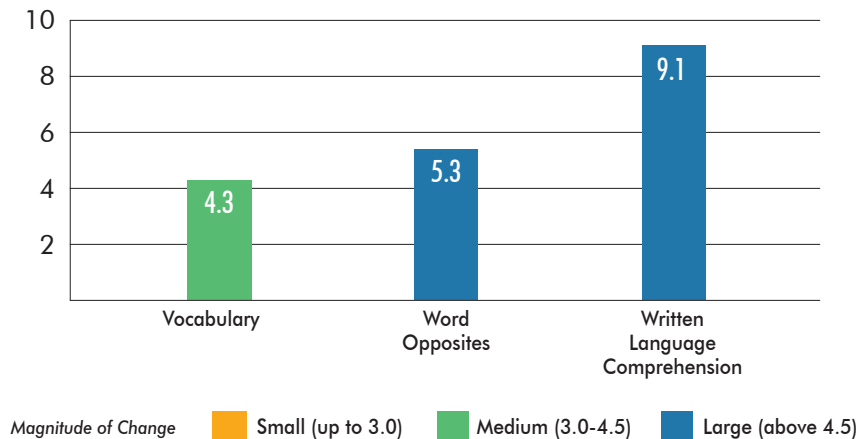
Speech or Language Impairment (SLI)

Students with a Prior SLI Diagnosis
Who Received Comprehension Instruction Only

Pre- and Retest Percentiles

	Pre	Retest
Vocabulary*	21	30
Word Opposites*	18	30
Written Language Comprehension*	12	27

*Statistically significant (p < .0001)   ■ Pre   ■ Retest

Average Standard Score Changes

Vocabulary	4.3
Word Opposites	5.3
Written Language Comprehension	9.1

Magnitude of Change   ■ Small (up to 3.0)   ■ Medium (3.0-4.5)   ■ Large (above 4.5)

Summary

Lindamood–Bell Instruction Implemented:
Visualizing and Verbalizing

Years:
Jan. 2008 – Sept. 2021

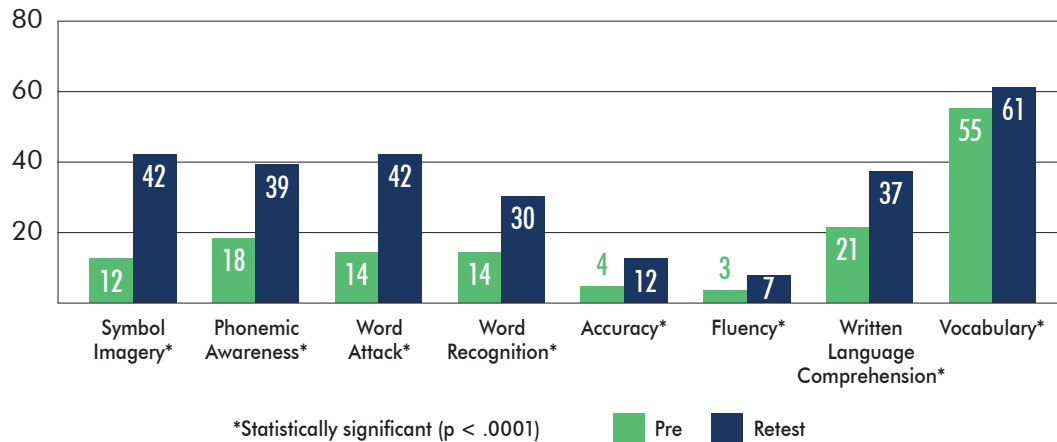**Number of Students:**
569

Average Age:
12.2

Average Instruction Hours:
121.1

Results: On average, students with prior SLI diagnoses with comprehension difficulties who received Visualizing and Verbalizing instruction achieved significant improvements in comprehension. They made large (statistically significant) standard score changes on two of the three measures. Additionally, the 15–point percentile increase in Written Language Comprehension put these students within the normal range (25th–75th percentile).
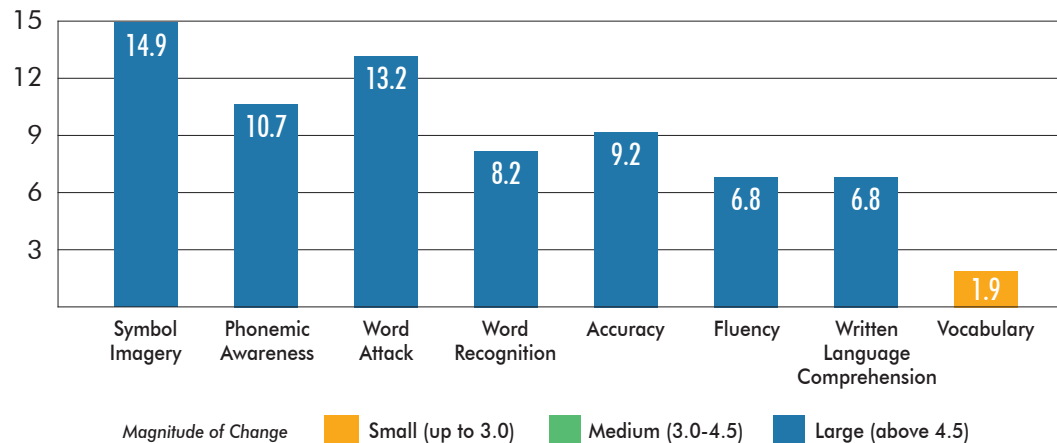
Central Auditory Processing Disorder (CAPD)

Students with a Prior CAPD Diagnosis
Who Received Decoding Instruction Only

Pre- and Retest Percentiles

	Symbol Imagery*	Phonemic Awareness*	Word Attack*	Word Recognition*	Accuracy*	Fluency*	Written Language Comprehension*	Vocabulary*
Pre	12	18	14	14	4	3	21	55
Retest	42	39	42	30	12	7	37	61

*Statistically significant (p < .0001) ■ Pre ■ Retest

Average Standard Score Changes

Symbol Imagery	Phonemic Awareness	Word Attack	Word Recognition	Accuracy	Fluency	Written Language Comprehension	Vocabulary
14.9	10.7	13.2	8.2	9.2	6.8	6.8	1.9

Magnitude of Change ■ Small (up to 3.0) ■ Medium (3.0-4.5) ■ Large (above 4.5)

Summary

Lindamood–Bell Instruction Implemented:
Seeing Stars

Years:
Jan. 2008 – Sept. 2021

Number of Students:
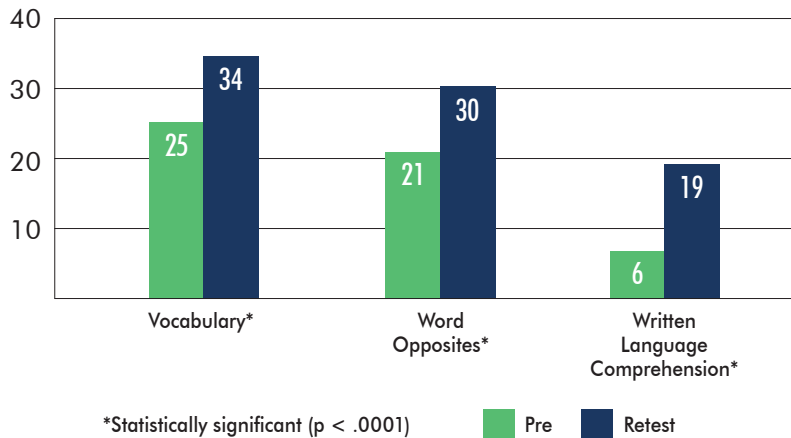461

Average Age:
10.6

Average Instruction Hours:
123.1

Results: On average, students with a prior CAPD diagnosis who received Seeing Stars instruction achieved significant improvements in reading. They made large (statistically significant) standard score changes on all measures. Vocabulary was not a targeted measure of instruction. The 16-point percentile increase in Word Recognition put these students within the normal range (25th–75th percentile). Additionally, the large average standard score change on the Written Language Comprehension measure indicates strong improvement in the ability to understand what is read.
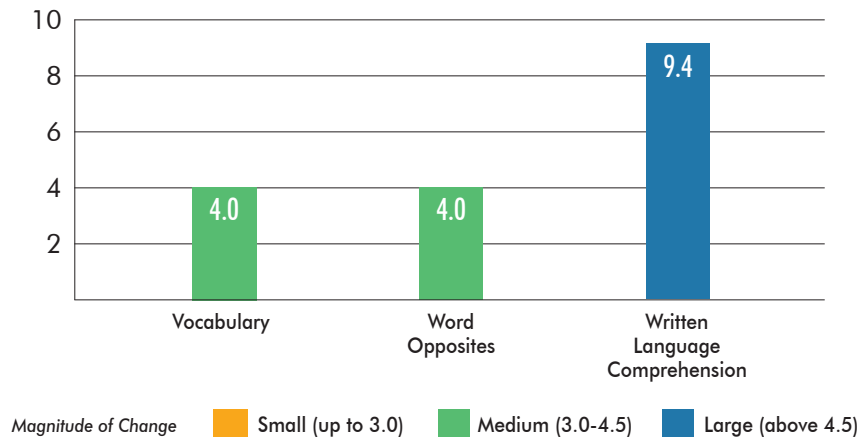
Hyperlexia

Students with a Prior Diagnosis of Hyperlexia
Who Received Comprehension Instruction Only

Pre- and Retest Percentiles

Chart: Pre- and Retest Percentiles

- Vocabulary*: Pre 25, Retest 34
- Word Opposites*: Pre 21, Retest 30
- Written Language Comprehension*: Pre 6, Retest 19

*Statistically significant (p < .0001)   ■ Pre   ■ Retest

Average Standard Score Changes

Chart: Average Standard Score Changes

- Vocabulary: 4.0
- Word Opposites: 4.0
- Written Language Comprehension: 9.4

Magnitude of Change   ■ Small (up to 3.0)   ■ Medium (3.0-4.5)   ■ Large (above 4.5)

Summary

Lindamood-Bell Instruction Implemented:
Visualizing and Verbalizing

Years:
Jan. 2008 – Sept. 2021
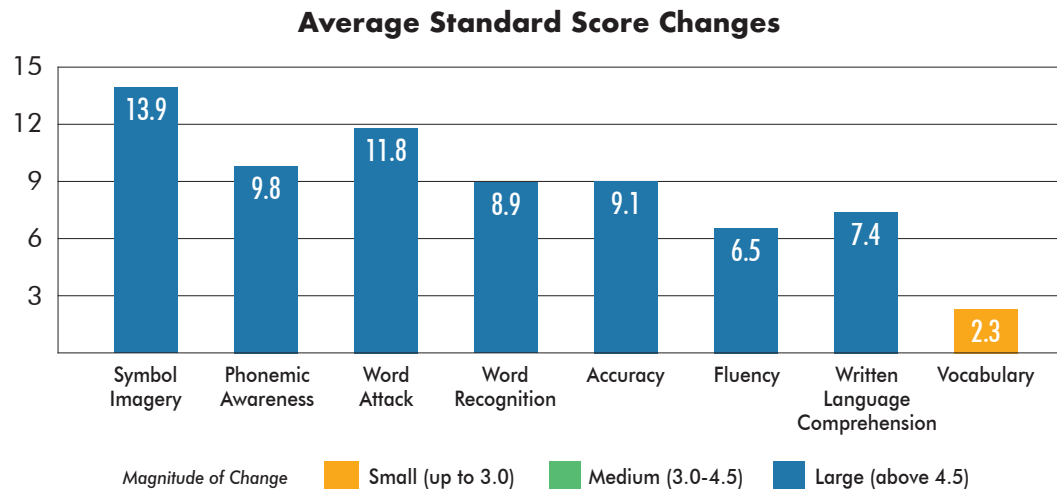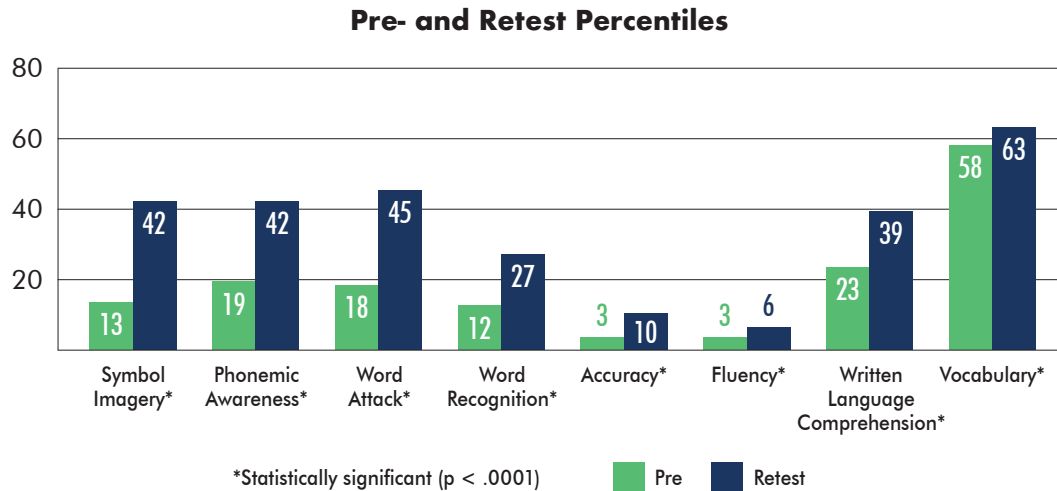
Number of Students:
85

Average Age:
12.0

Average Instruction Hours:
120.4

Results: On average, students with a prior Hyperlexia diagnosis who received Visualizing and Verbalizing instruction achieved significant improvements in comprehension. They made large (statistically significant) standard score changes on all measures. Additionally, 9-point percentile increases in receptive (Vocabulary) and expressive (Word Opposites) vocabulary put these students within the normal range (25th–75th percentile).

Special Education (SPED)

Results of SPED Students Who Received Decoding Instruction Only

Pre- and Retest Percentiles

	Pre	Retest
Symbol Imagery*	13	42
Phonemic Awareness*	19	42
Word Attack*	18	45
Word Recognition*	12	27
Accuracy*	3	10
Fluency*	3	6
Written Language Comprehension*	23	39
Vocabulary*	58	63

*Statistically significant (p < .0001)   ■ Pre   ■ Retest

Average Standard Score Changes

Symbol Imagery	Phonemic Awareness	Word Attack	Word Recognition	Accuracy	Fluency	Written Language Comprehension	Vocabulary
13.9	9.8	11.8	8.9	9.1	6.5	7.4	2.3

Magnitude of Change   ■ Small (up to 3.0)   ■ Medium (3.0-4.5)   ■ Large (above 4.5)

Summary

Lindamood–Bell Instruction Implemented:
Seeing Stars

Years:
Jan. 2008 – Sept. 2021

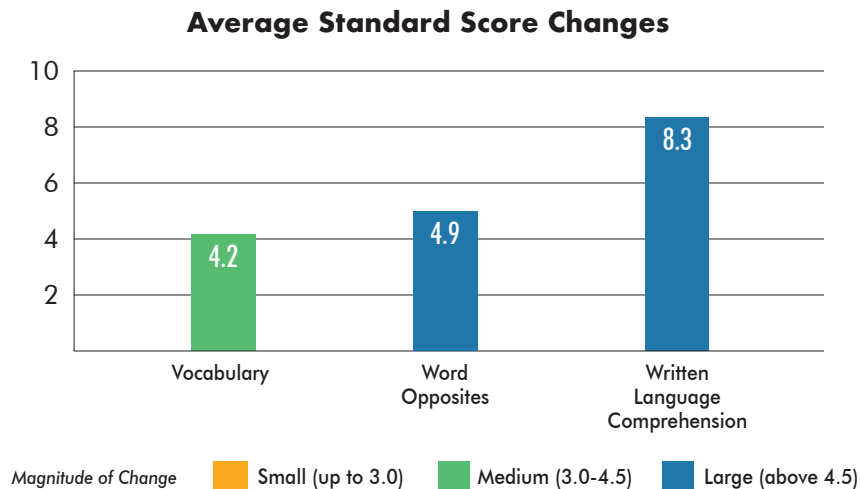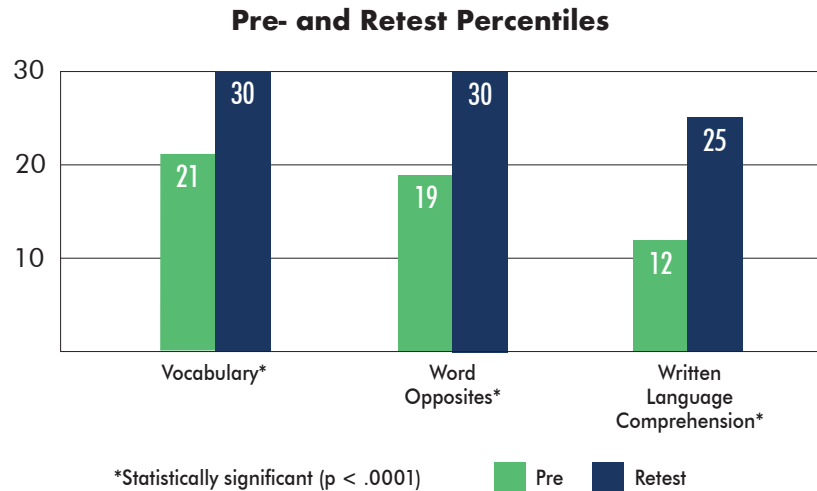**Number of Students:**
2,279

Average Age:
10.5

Average Instruction Hours:
124.5

Results: On average, students receiving Special Education services who received Seeing Stars instruction achieved significant improvements in decoding. They made large (statistically significant) standard score changes on all measures. Vocabulary was not a targeted measure of instruction. Additionally, a 15-point percentile increase in Word Recognition and, notably, a 16-point percentile increase in Written Language Comprehension put these students within the normal range (25th–75th percentile).

Special Education (SPED)

Results of SPED Students Who Received Comprehension Instruction Only

Pre- and Retest Percentiles

*Statistically significant (p < .0001)   ■ Pre   ■ Retest

Average Standard Score Changes

Magnitude of Change   ■ Small (up to 3.0)   ■ Medium (3.0-4.5)   ■ Large (above 4.5)

Summary

Lindamood–Bell Instruction Implemented:
Visualizing and Verbalizing

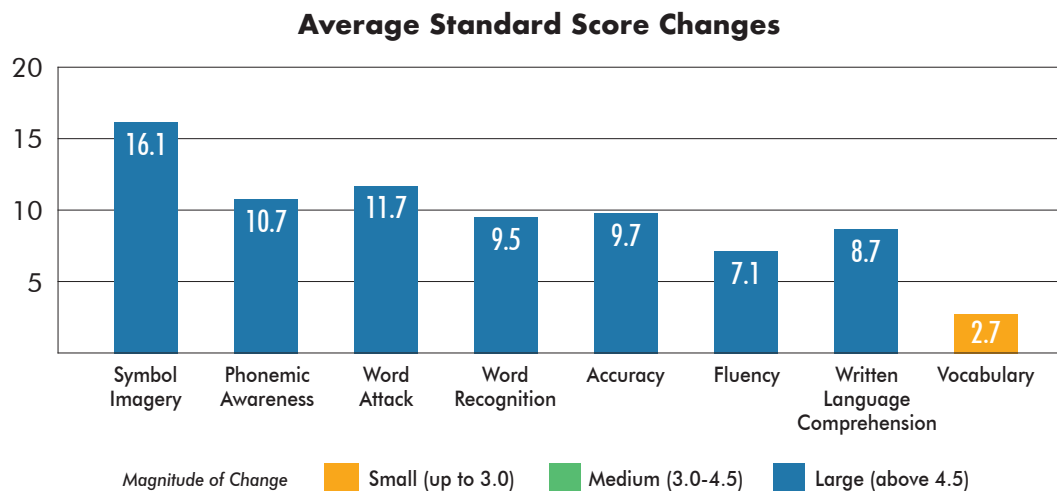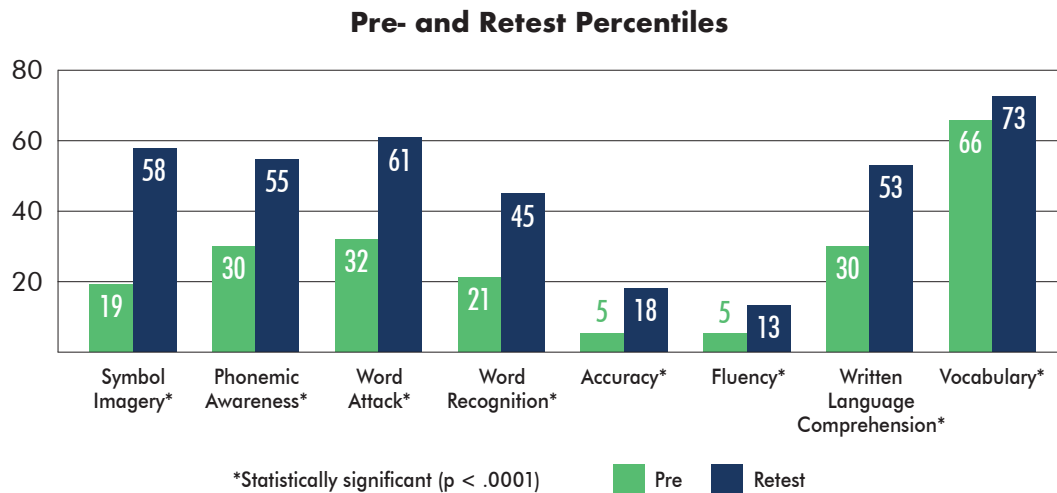**Years:**
Jan. 2008 – Sept. 2021

Number of Students:
1,679

Average Age:
12.8

Average Instruction Hours:
121.6

Results: On average, students receiving Special Educations services who received Visualizing and Verbalizing instruction achieved significant improvements in comprehension. They made large (statistically significant) standard score changes on two of the three measures. Additionally, the 13-point percentile increase in Written Language Comprehension, a large (statistically significant) standard score change, put these students in the normal range (25th–75th percentile).

English as a Second Language (ESL)

Results of ESL Students Who Received Decoding Instruction Only

Pre- and Retest Percentiles

Category	Pre	Retest
Symbol Imagery*	19	58
Phonemic Awareness*	30	55
Word Attack*	32	61
Word Recognition*	21	45
Accuracy*	5	18
Fluency*	5	13
Written Language Comprehension*	30	53
Vocabulary*	66	73

*Statistically significant (p < .0001)   Pre   Retest

Average Standard Score Changes

Category	Value
Symbol Imagery	16.1
Phonemic Awareness	10.7
Word Attack	11.7
Word Recognition	9.5
Accuracy	9.7
Fluency	7.1
Written Language Comprehension	8.7
Vocabulary	2.7

Magnitude of Change   Small (up to 3.0)   Medium (3.0-4.5)   Large (above 4.5)

Summary

Lindamood-Bell Instruction Implemented:
Seeing Stars

Years:
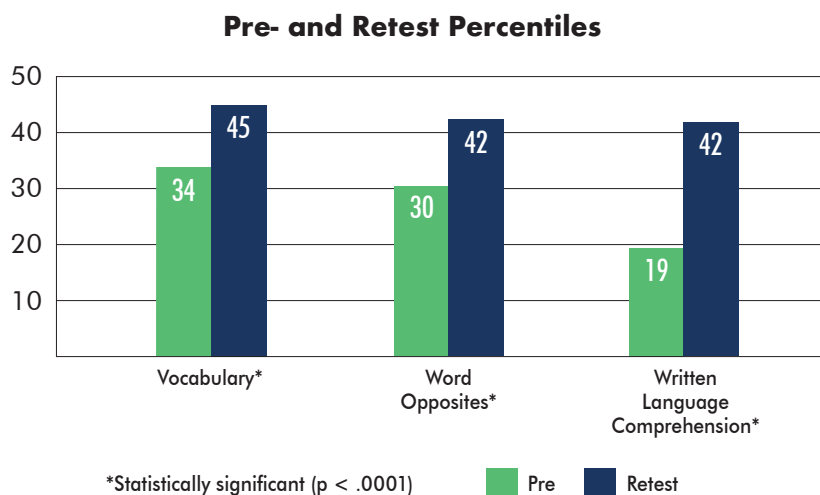Jan. 2008 – Sept. 2021

Number of Students:
1,891

Average Age:
9.5

Average Instruction Hours:
106.1

Results: ESL students who requested an accelerated approach to developing their decoding skills received instruction in the Seeing Stars program. On average, they achieved excellent improvements on all measures of reading. They made large (statistically significant) standard score changes on all reading measures. Vocabulary was not a targeted measure of instruction. As a result of significant improvements in Phonemic Awareness and orthographic awareness (Symbol Imagery), they experienced an average 24-point percentile increase in Word Recognition and a 23-point percentile increase in Comprehension. These increases in their English reading skills put these students well within the normal range (25th-75 percentile).

English as a Second Language (ESL)

Results of ESL Students Who Received Comprehension Instruction Only

Pre- and Retest Percentiles

	Vocabulary*	Word Opposites*	Written Language Comprehension*
Pre	34	30	19
Retest	45	42	42

*Statistically significant (p < .0001)   ■ Pre   ■ Retest

Average Standard Score Changes

Vocabulary	Word Opposites	Written Language Comprehension
4.2	5.4	10.2

Magnitude of Change   ■ Small (up to 3.0)   ■ Medium (3.0-4.5)   ■ Large (above 4.5)
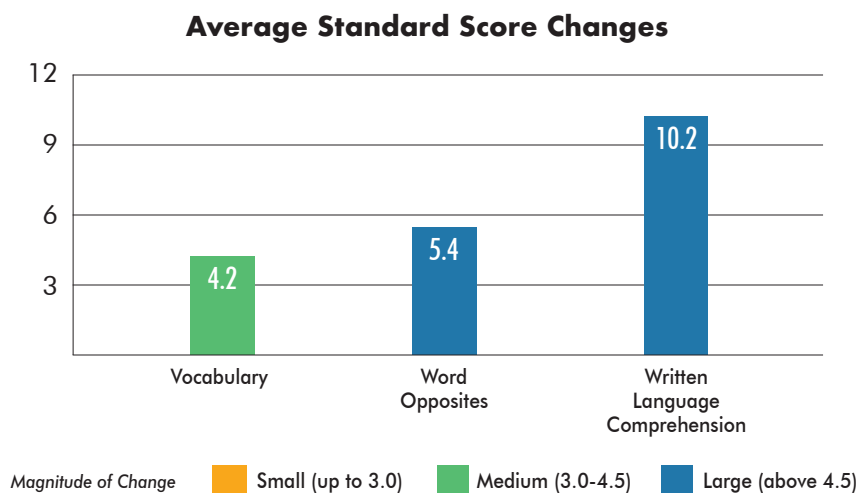
Summary

Lindamood-Bell Instruction Implemented:
Visualizing and Verbalizing

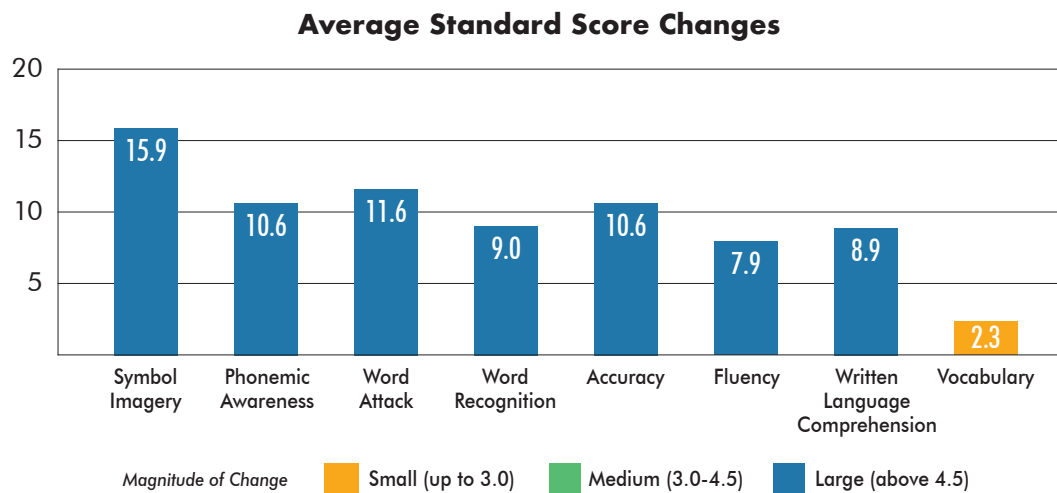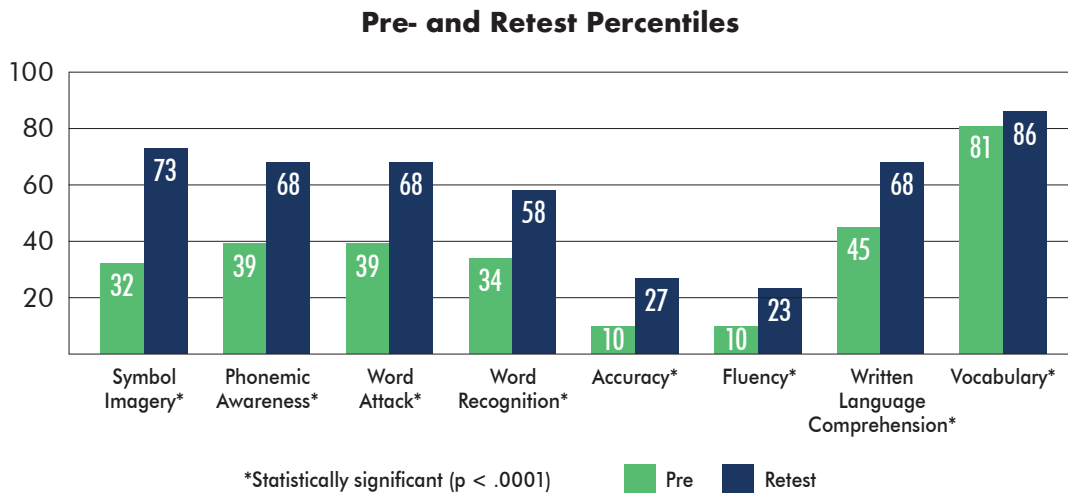**Years:**
Jan. 2008 – Sept. 2021

Number of Students:
1,259

Average Age:
12.3

Average Instruction Hours:
104.5

Results: ESL students who requested an accelerated approach to increase their vocabulary and comprehension received instruction in the Visualizing and Verbalizing program. On average, these students achieved excellent improvements in targeted reading measures. They made large (statistically significant) standard score changes on expressive oral vocabulary (Word Opposites) measures, and they also grew 11 percentile points in receptive oral vocabulary (Vocabulary) measures. As a result of significant improvements in these students' abilities to visualize and verbalize, they experienced an average 23-point percentile increase in Written Language Comprehension. These increases in their English reading skills put these students well within the normal range (25th-75 percentile).

Pre-Kindergarten

Results of Pre-K Students Who Received Any Program of Instruction
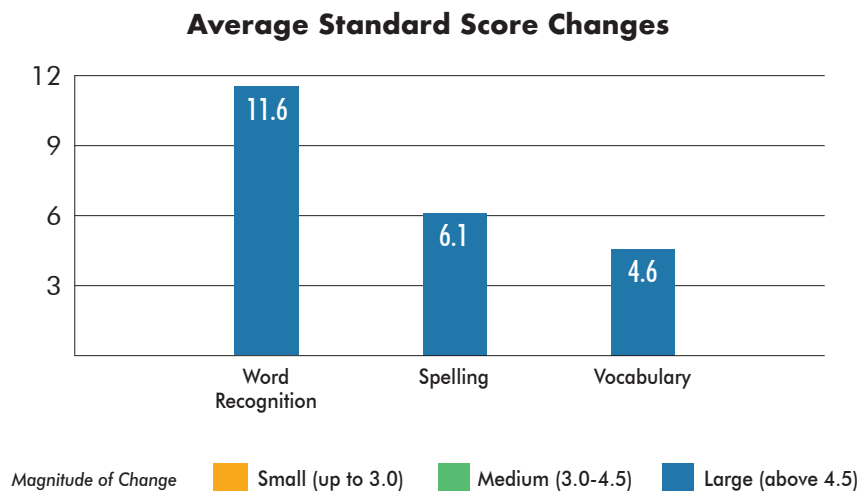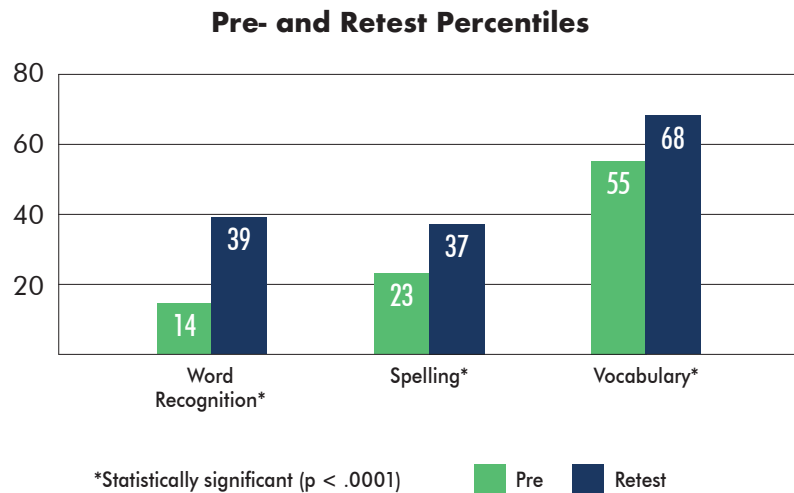
Pre- and Retest Percentiles

	Word Recognition*	Spelling*	Vocabulary*
Pre	14	23	55
Retest	39	37	68

*Statistically significant (p < .0001) ■ Pre ■ Retest

Average Standard Score Changes

Word Recognition	Spelling	Vocabulary
11.6	6.1	4.6

Magnitude of Change ■ Small (up to 3.0) ■ Medium (3.0-4.5) ■ Large (above 4.5)

Summary

Lindamood-Bell Instruction Implemented:
Seeing Stars and Visualizing and Verbalizing

Years:
Jan. 2008 – Sept. 2021

Number of Students:
177

Average Age:
5.4

Average Instruction Hours:
101.9

Results: On average, Pre-Kindergarten students who received developmental instruction achieved significant improvements. They made large (statistically significant) standard score changes on all three measures. Additionally, the 25-point percentile increase in Word Recognition put these students within the normal range (25th–75th percentile). (Please note, as a result of their young age, the number of test batteries normed to these students' ages is limited. Word Recognition is out of 115 students, Spelling is out of 112 students and Vocabulary is out of 177 students.

Gifted

Results of Gifted Students Who Received Decoding Instruction Only

Pre- and Retest Percentiles

Measure	Pre	Retest
Symbol Imagery*	32	73
Phonemic Awareness*	39	68
Word Attack*	39	68
Word Recognition*	34	58
Accuracy*	10	27
Fluency*	10	23
Written Language Comprehension*	45	68
Vocabulary*	81	86

*Statistically significant (p < .0001)   Pre   Retest

Average Standard Score Changes

Measure	Change
Symbol Imagery	15.9
Phonemic Awareness	10.6
Word Attack	11.6
Word Recognition	9.0
Accuracy	10.6
Fluency	7.9
Written Language Comprehension	8.9
Vocabulary	2.3

Magnitude of Change   Small (up to 3.0)   Medium (3.0-4.5)   Large (above 4.5)

Summary

Lindamood-Bell Instruction Implemented:
Seeing Stars

Years:
Jan. 2008 – Sept. 2021

Number of Students:
487

Average Age:
9.8

Average Instruction Hours:
95.8

Results: On average, students categorized as Gifted who received Seeing Stars instruction achieved significant improvements in reading. They made large (statistically significant) standard score changes on all measures. Vocabulary was not a targeted measure of instruction.

Middle School

Results of Middle School Students Who Received Comprehension Instruction Only
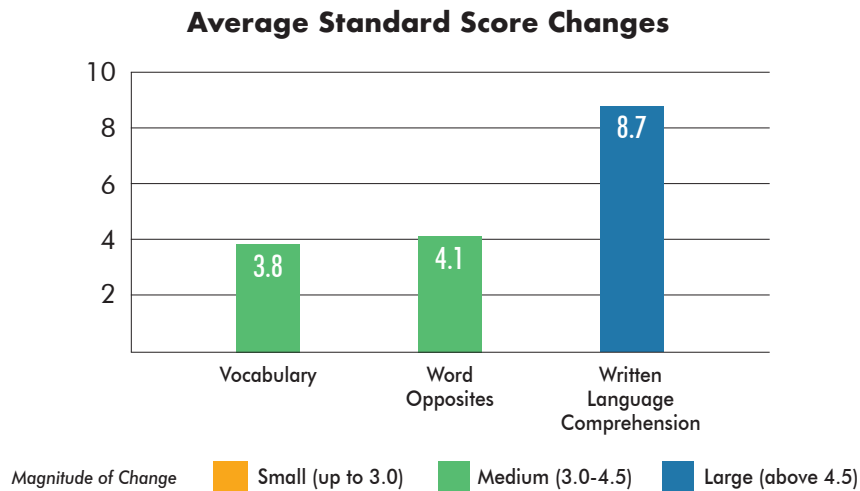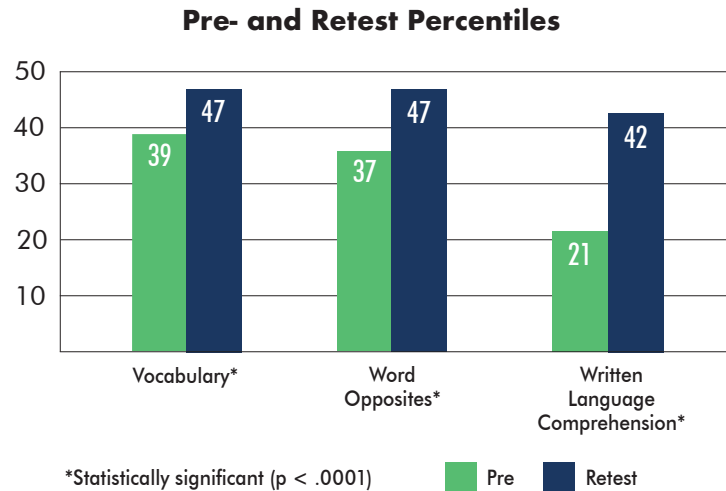
Pre- and Retest Percentiles

Measure	Pre	Retest
Vocabulary*	39	47
Word Opposites*	37	47
Written Language Comprehension*	21	42

*Statistically significant (p < .0001) ■ Pre ■ Retest

Average Standard Score Changes

Measure	Change
Vocabulary	3.8
Word Opposites	4.1
Written Language Comprehension	8.7

Magnitude of Change ■ Small (up to 3.0) ■ Medium (3.0-4.5) ■ Large (above 4.5)

Summary

Lindamood–Bell Instruction Implemented:
Visualizing and Verbalizing

Years:
Jan. 2008 – Sept. 2021

Number of Students:
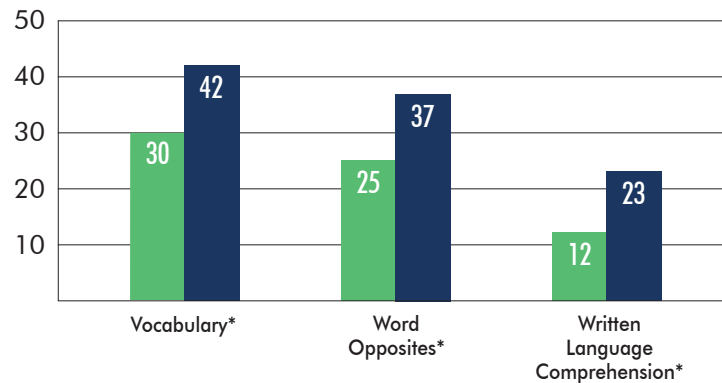1,611

Average Age:
13.1

Average Instruction Hours:
104.8

Results: On average, Middle School students who received Visualizing and Verbalizing instruction achieved significant improvements in comprehension. They made large (statistically significant) standard score changes on their language comprehension measure. Additionally, the 21-point percentile increase in Written Language Comprehension put these students within the normal range (25th–75th percentile).

High School

Results of High School Students Who Received Comprehension Instruction Only
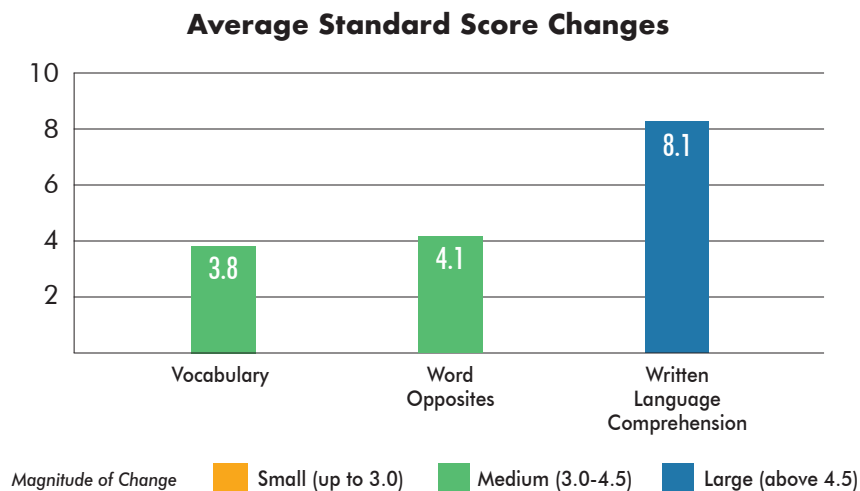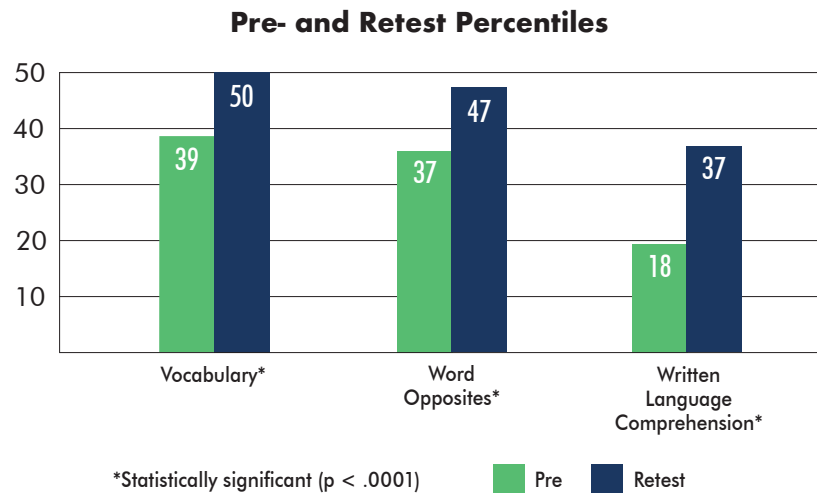
Pre- and Retest Percentiles

*Statistically significant (p < .0001)   ■ Pre   ■ Retest

Average Standard Score Changes

Magnitude of Change   ■ Small (up to 3.0)   ■ Medium (3.0-4.5)   ■ Large (above 4.5)

Summary

Lindamood–Bell Instruction Implemented:
Visualizing and Verbalizing

Years:
Jan. 2008 – Sept. 2021

Number of Students:
841

Average Age:
16.2

Average Instruction Hours:
103.8

Results: On average, High School students who received Visualizing and Verbalizing instruction achieved significant improvements in comprehension. They made medium (statistically significant) standard score changes on two of the three measures. Additionally, the 19-point percentile increase in Written Language Comprehension put these students within the normal range (25th–75th percentile).

College–Aged

Results of College-Aged School Students (Ages 18-22)
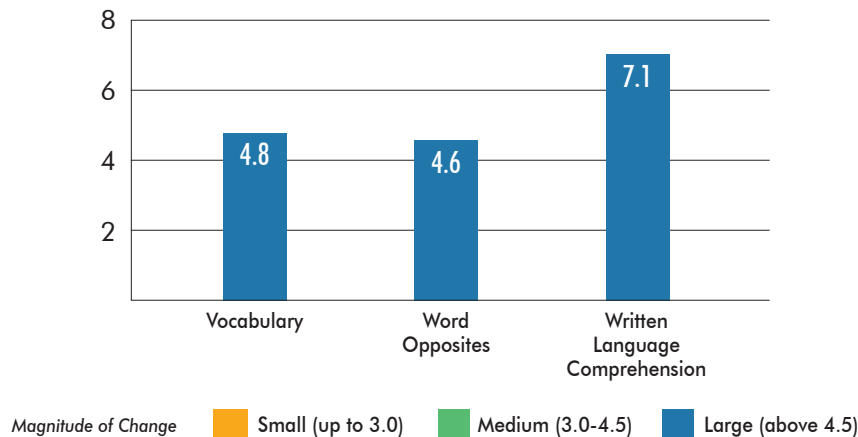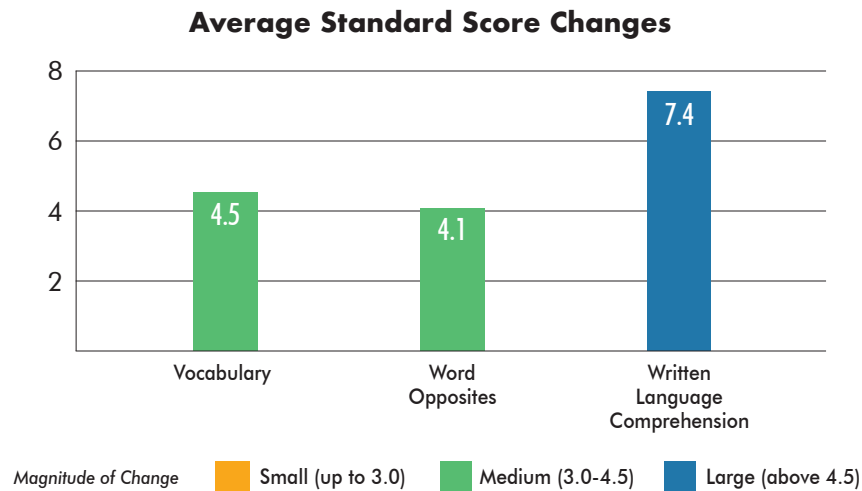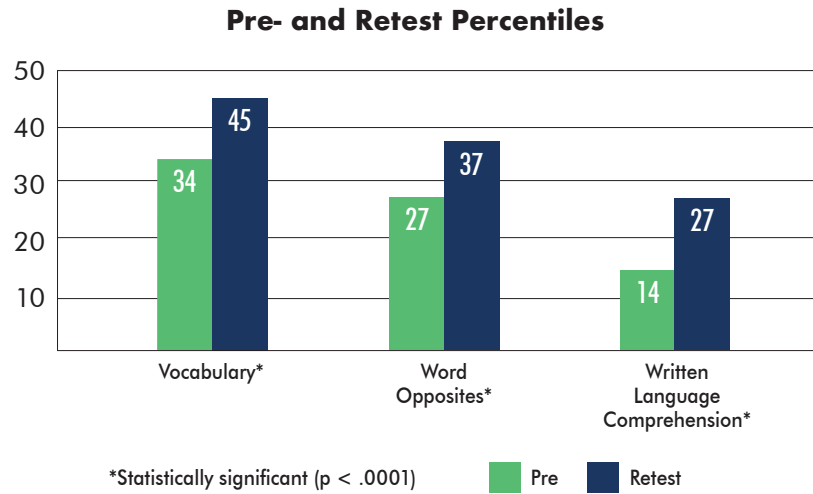Who Received Comprehension Instruction Only

Pre- and Retest Percentiles

*Statistically significant (p < .0001)   ■ Pre   ■ Retest

	Vocabulary*	Word Opposites*	Written Language Comprehension*
Pre	30	25	12
Retest	42	37	23

Average Standard Score Changes

Magnitude of Change   ■ Small (up to 3.0)   ■ Medium (3.0-4.5)   ■ Large (above 4.5)

Vocabulary	Word Opposites	Written Language Comprehension
4.8	4.6	7.1

Summary

Lindamood–Bell Instruction Implemented:
Visualizing and Verbalizing

Years:
Jan. 2008 – Sept. 2021

Number of Students:
223

Average Age:
19.8

Average Instruction Hours:
121.7

Results: On average, College–Aged students who received Visualizing and Verbalizing instruction achieved significant improvements in comprehension. They made large (statistically significant) standard score changes on all measures.

Adult

Results of Adult Students Who Received Comprehension Instruction Only

Pre- and Retest Percentiles

	Vocabulary*	Word Opposites*	Written Language Comprehension*
Pre	34	27	14
Retest	45	37	27

*Statistically significant (p < .0001) ■ Pre ■ Retest

Average Standard Score Changes

Vocabulary	Word Opposites	Written Language Comprehension
4.5	4.1	7.4

Magnitude of Change ■ Small (up to 3.0) ■ Medium (3.0-4.5) ■ Large (above 4.5)

Summary

Lindamood–Bell Instruction Implemented:
Visualizing and Verbalizing

Years:
Jan. 2008 – Sept. 2021

Number of Students:
363

Average Age:
26.2

Average Instruction Hours:
113.6

Results: On average, adult students who received Visualizing and Verbalizing instruction achieved significant improvements in comprehension. They made medium (statistically significant) standard score changes on two of three measures while experiencing a large (statistically significant) increase in Written Language Comprehension. These changes placed them into the normal range (25th–75th percentile).

Summary

Summary Findings for Lindamood-Bell
Learning Center Sensory-Cognitive Intervention

Lindamood–Bell Learning Processes understands the complex nature of both diagnosing and addressing the learning challenges of all ages of individuals. The disaggregated data represented here utilizes evidence–based science in assisting all individuals to learn to their potential. While we can celebrate these findings, we continue to research internally and externally with our university partners in more specific ways, more evidence–based practices, to significantly increase the quality of instruction to those who struggle to learn.

As can be seen in all of the categories represented in this data, we find that being learning impaired need not be a lifelong challenge, that with the right diagnoses, customized interventions and competent instruction, significant improvement can be achieved in language and cognitive processing for people struggling to learn.

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