



LANGUAGE LEARNING INTERVENTION RESEARCH: *EARLY CHILDHOOD – GRADE 7*



*The Language Learning Intervention Research Study at Shelton School is
Funded by The Sparrow Foundation*

Curtis W. McIntyre
Joyce S. Pickering, Hum.D., CCC/SLP
Executive Director Emeritus
Shelton School & Evaluation Center
Dallas, Texas 75248 972-774-1772
www.shelton.org

June Shelton School & Evaluation Center

- ✓ Founded April 2, 1976
- ✓ Students with learning differences preschool through grade twelve
- ✓ Comprehensive curriculum with strong academic orientation
- ✓ Supportive environment, stressing multisensory learning techniques
- ✓ Accredited by Independent Schools Association of the Southwest (ISAS)
- ✓ Member of Southern Association of Independent Schools (SAIS)

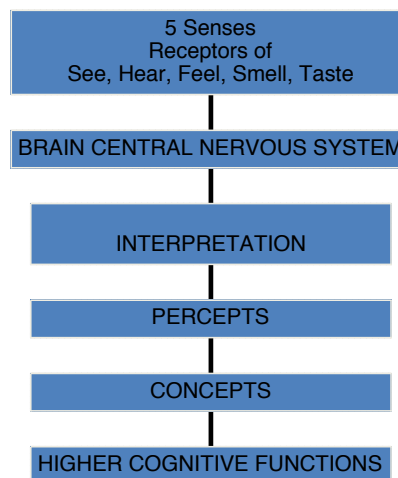
We define a language-learning different child as:

- ✓ Average or above average intelligence
- ✓ Adequate vision and hearing
- ✓ Without primary emotional disturbance

We define a language-learning different child as:

- ✓ Failed or at high risk to fail when exposed to conventional educational techniques
- ✓ Differences are result of auditory and visual processing dysfunction, and include the specific language disorder, dyslexia, and related disorders

The Learning Process



Shelton's Language Intervention Program



Language Intervention Program

- ✓ DuBard Association Method
- ✓ Montessori (EC to 4th grade)
- ✓ Occupational Therapy (EC to 4th grade)
- ✓ 6 Classes (68 students)
 - Early Childhood: 9
 - Pre-Primary: 13
 - Primary: 11
 - 3rd and 4th grade: 12
 - 5th grade: 11
 - 6th/7th grade: 12

Description of Language Intervention Program

- ✓ Students presented with moderate to severe oral language disorders, and/or severe articulation disorders, and characteristics of children at risk for learning differences
- ✓ Unique mixture of Montessori and the DuBard Association Method
- ✓ Attempted to have a speech-language pathologist as one of the teachers in all classrooms

Description of Language Intervention Program

EC through Grade 4 Classrooms

- ✓ One Montessori Teacher trained in DuBard Association Method
- ✓ One Speech Language-Therapist trained in DuBard Association Method
- ✓ Occupational Therapy / Sensory-Integration
- ✓ Early Childhood ~10 students
- ✓ Primary through 4th ~ 12 students

Description of Language Intervention Program

5th and 6th Grade Classrooms

- ✓ Two teachers per classroom
- ✓ DuBard Association Method continues
- ✓ Approximately 12 students per classroom

Language Intervention Program Inclusion Criteria

Early Childhood and Pre-primary

Specific characteristics considered were delays or disorders in

- ✓ Coordination
- ✓ Language (Oral and Written)
- ✓ Attention
- ✓ Perception

Montessori—Practical Life

✓ Goals

- Independence in Life Skills
- Learning How to Learn
- Enhanced Self-Concept

✓ Includes Lessons of:

- Grace & Courtesy
- Care of Self & Environment
- Motor Coordination

✓ Fosters

- Gross Motor Skills
- Fine Motor Skills
- Eye Hand Coordination
- Order
- Sequence
- Sustained Attention/
Concentration
- Self-Control
- Social Skills
- Language Development

Montessori—Sensorial

✓ Goals

- Categorization of the world through the 5 senses
- Perception of sensory information from greatest contrast to finer & finer discrimination
- Language Development

✓ Includes Lessons of:

- Visual, Auditory, Tactile, Olfactory & Gustatory
- Identification & Discrimination

✓ Fosters

- Gross Motor Skills
- Fine Motor Skills
- Eye Hand Coordination
- Order
- Sequence
- Sensory Discrimination
- Sensory Integration
- Sustained Attention/Concentration
- Self-Control
- Social Skills
- Language Development
- Prerequisite for Math Concepts
- Reasoning Skills

Montessori—Mathematics

✓ Goals

- The acquisition of math concepts and functions

✓ Includes Lessons of:

- Counting
- Number to Quantity
- Visual Recognition of Numbers and Writing
- Place Value
- Standard/Expanded Numbers
- Functions (+, -, x, ÷)
- Fractions
- Abstractions

✓ Fosters

- Gross Motor Skills
- Fine Motor Skills
- Eye Hand Coordination
- Order
- Sequence
- Sensory Discrimination
- Sensory Integration
- Sustained Attention/Concentration
- Self-Control
- Social Skills
- Language Development
- Prerequisite for Math Concepts
- Reasoning Skills

Montessori—Oral Language

✓ Goals

- The acquisition of vocabulary usually available to a child five years of age

✓ Includes Lessons of:

*Vocabulary of 9 categories:

1. Body
2. Family
3. Clothing
4. House
5. Community
6. Geography
7. Animals
8. Plants
9. Food

*General Language Concepts

*Seasonal Language

*Usage of vocabulary in sentences & questions

✓ Fosters

- Fine Motor Skills
- Eye Hand Coordination
- Order
- Sequence
- Sensory Discrimination
- Sensory Integration
- Sustained Attention/Concentration
- Self-Control
- Social Skills
- Language Development/Concepts
- Conversational Skills



Montessori—Written Language

- ✓ Goals
 - The acquisition of pre-writing, writing, pre-reading, & reading
- ✓ Includes Lessons of:
 - Phonological Awareness Skills
 - Visual Recognition of Letters
 - Sound/Symbol Correspondence
 - Blending
 - Decoding/Encoding
 - Syllabication
 - Vocabulary
 - Fluency
 - Writing Vocabulary in Sentences and Questions
- ✓ Fosters
 - Fine Motor Skills
 - Eye Hand Coordination
 - Order
 - Sequence
 - Sensory Discrimination
 - Sensory Integration
 - Sustained Attention/Concentration
 - Self-Control
 - Social Skills
 - Language Development/Concepts
 - Conversational Skills
 - Reading Skills
 - Writing Skills
 - Spelling Skills

Progress Checklist for Teacher

Sample

Practical Life	
Pouring	1 2 3 4 5 6 7 8
Sensorial	
Pink Tower	1 2 3 4 5 6 7 8
Math	
Spindle Box	1 2 3 4 5 6 7 8
Language	
Sandpaper Letters	1 2 3 4 5 6 7 8

Combining Montessori with the DuBard Association Method

✓ Goals:

- Give teachers/therapists opportunities to engage in diagnostic teaching
- Meet the unique needs of the students within one curriculum to increase successful learning experiences
 - Expose students to elements of the DuBard Association Method which would enhance the Montessori materials for this population

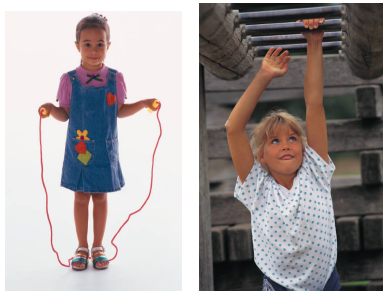
Planning The Program

Montessori Applied to Children at Risk

+ DuBard Association Method

= Ideal Learning Environment

Motor



The Occupational Therapist's Role in the LI program

- ♦ To provide educationally based therapy services to the children in LI classrooms through the 4th grade (46 children)
- ♦ Each class has 1 therapist assigned to work in the classroom 2 days a week
- ♦ All therapists are from Integrative Pediatric Therapy
- ♦ All are experienced, licensed professionals specializing in Pediatrics & Sensory Integration.



Sensory Integration involves

The **interpretation** and **organization** of sensory information through the central nervous system



Sensory Integration forms

The
Foundation
from which all
aspects of our
development
are built upon

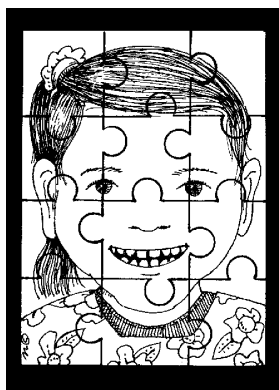
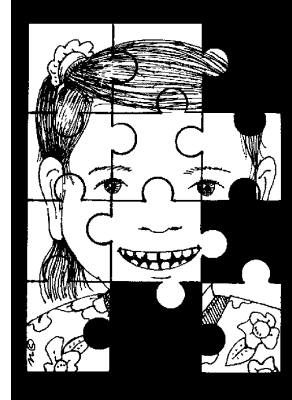
TESTING



Why Do We Test?

To gain a profile of an individual's strengths and weaknesses in:

- Mental ability
- Perceptual ability
- Academic skills
- Attention/Behavior



With this profile, a specific prescription may be made for a student's academic program.

Language Intervention Program Test Battery

- ✓ Cognitive Ability
- ✓ Perceptual Skills
- ✓ Language/Articulation Skills
- ✓ Academic Skills
- ✓ Memory/Attention
- ✓ Parent/Teacher Checklists
- ✓ Motor Skills

Cognitive Ability

- ✓ Wechsler Nonverbal Scale of Ability
(2 subtests)
- ✓ Slosson Intelligence Test-R
- ✓ Draw-A-Person

Perceptual Skills

- ✓ Comprehensive Test of Phonological Processing
- ✓ Beery Test of Visual-Motor Integration

Language/Articulation Skills

- ✓ Clinical Evaluation of Language Fundamentals - 4
- ✓ Clinical Evaluation of Language Fundamentals – PS-2
- ✓ Peabody Picture Vocabulary Test IV
- ✓ Expressive 1-Word Picture Vocabulary Test – 4th Ed.
- ✓ Arizona Articulation Proficiency Scale – 3rd Ed.
- ✓ Verbal Motor Production Assessment for Children

Academic Skills

- ✓ Wide Range Achievement Test 4
- ✓ Woodcock-Johnson III – Achievement
- ✓ Gray Oral Reading Test – 4
- ✓ Gilmore Oral Reading Test
- ✓ Gates-MacGinitie Oral Subtests
- ✓ Test of Written Spelling
- ✓ Cursive alphabet
- ✓ Number writing
- ✓ Jones Spontaneous Writing Sample

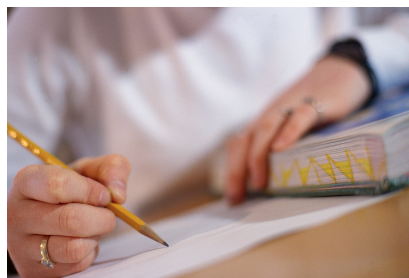
Attention/Memory

- ✓ BASC – 2
 - Parent Form
 - Teacher Form

Motor Skills

- ✓ Bruininks-Oseretsky Test of Motor Proficiency-2 (short)
- ✓ Miller Assessment for Preschoolers
- ✓ Beery Test of Visual-Motor Integration

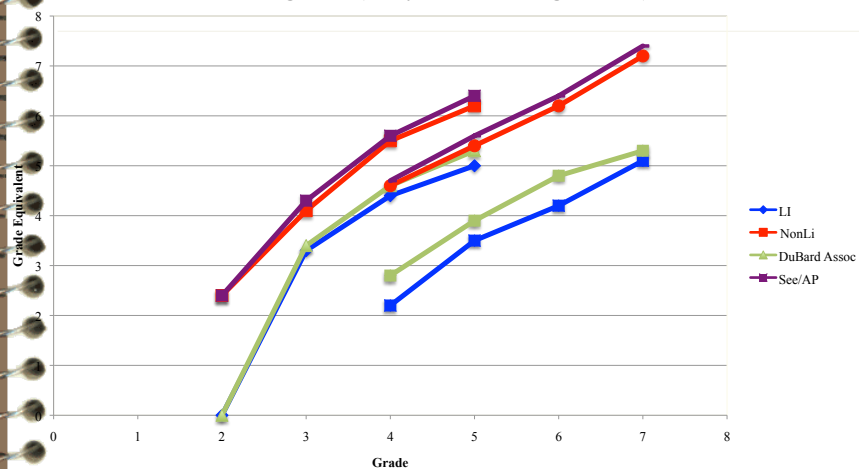
TEST RESULTS - DATA



LI vs Non-LI Comparison Study

- ✓ Various progress scores were compared across 4 years
- ✓ Students in kindergarten through 4th grade in 2008 were studied longitudinally for 4 years, concluding in May, 2011
- ✓ Various programs included LI (Language Intervention), Non-LI, DuBard Association, and SEE/AP
- ✓ Progress scores increased steadily for all programs during the 4 year study

Reading Rate (Gray Oral Reading Test IV)

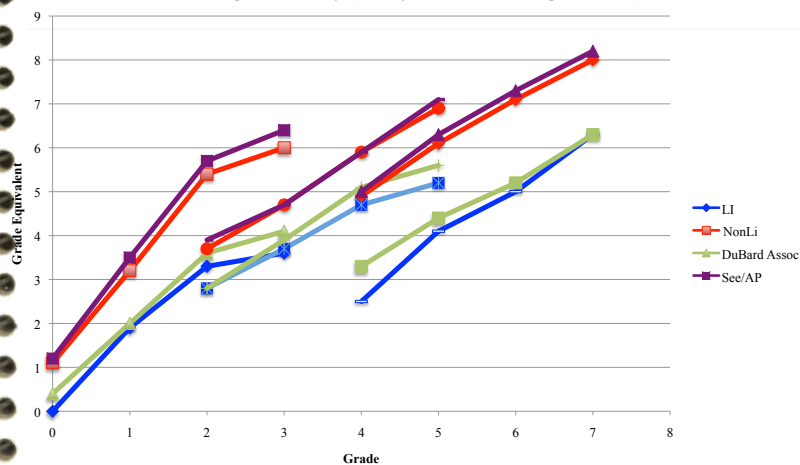


Reading Rate (2nd-5th)				
	2008	2009	2010	2011
LI (n=11)	NA	3.3	4.4	5
Non-Li (n=34)	2.4	4.1	5.5	6.2
Association (n=18)	NA	3.4	4.6	5.3
SEE, AP (n=27)	2.4	4.3	5.6	6.4

Reading Rate (4th-7th)				
	2008	2009	2010	2011
LI (n=6)	2.2	3.5	4.2	5.1
Non-Li (n=92)	4.6	5.4	6.2	7.2
Association (n=15)	2.8	3.9	4.8	5.3
SEE, AP (n=82)	4.7	5.6	6.4	7.4

Significant variables: Year (p-value < .05)
Program p-value < .05

Reading Accuracy (Gray Oral Reading Test IV)



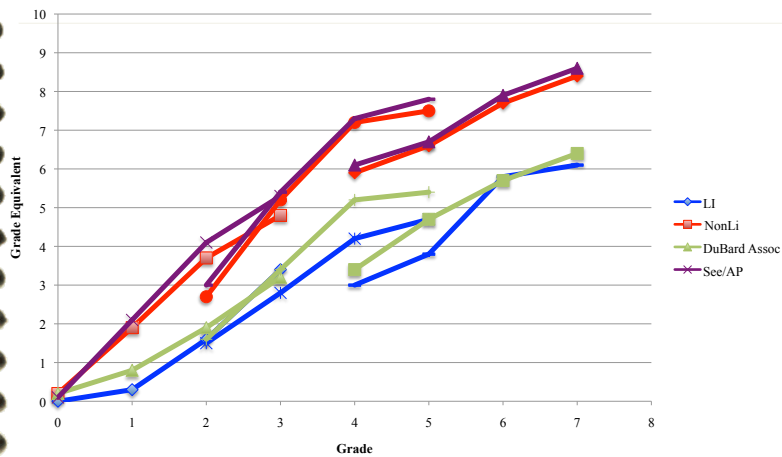
Reading Accuracy (K-3rd)				
	2008	2009	2010	2011
LI (n=4)	0	1.9	3.3	3.6
Non-Li (n=20)	1.1	3.2	5.4	6
Association (n=8)	0.4	2	3.6	4.1
SEE, AP (n=16)	1.2	3.5	5.7	6.4

Reading Accuracy (2nd-5th)				
	2008	2009	2010	2011
LI (n=11)	2.8	3.7	4.7	5.2
Non-Li (n=34)	3.7	4.7	5.9	6.9
Association (n=18)	2.8	3.9	5.1	5.6
SEE, AP (n=27)	3.9	4.7	5.9	7.1

Reading Accuracy (4th-7th)				
	2008	2009	2010	2011
LI (n=6)	2.5	4.1	5	6.3
Non-Li (n=92)	4.9	6.1	7.1	8
Association (n=15)	3.3	4.4	5.2	6.3
SEE, AP (n=82)	5	6.3	7.3	8.2

Significant variables: Grade (p-value < .05)
Program (p-value < .05)

Reading Comprehension (Gray Oral Reading Test IV)



Reading Comprehension (K-3rd)

	2008	2009	2010	2011
LI (n=4)	0	0.3	1.6	3.4
Non-Li (n=20)	0.2	1.9	3.7	4.8
Association (n=8)	0.2	0.8	1.9	3.2
SEE, AP (n=16)	0.1	2.1	4.1	5.3

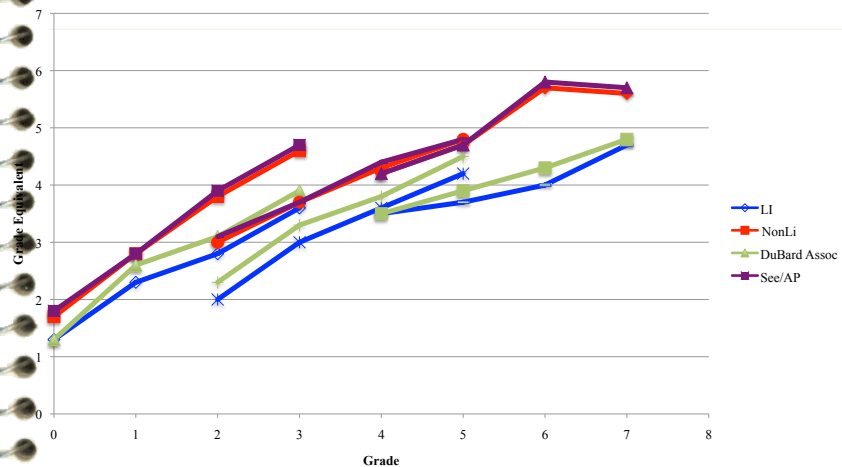
Reading Comprehension (2nd-5th)

	2008	2009	2010	2011
LI (n=11)	1.5	2.8	4.2	4.7
Non-Li (n=34)	2.7	5.2	7.2	7.5
Association (n=18)	1.6	3.4	5.2	5.4
SEE, AP (n=27)	3	5.4	7.3	7.8

Reading Comprehension (4th-7th)

	2008	2009	2010	2011
LI (n=6)	3	3.8	5.8	6.1
Non-Li (n=92)	5.9	6.6	7.7	8.4
Association (n=15)	3.4	4.7	5.7	6.4
SEE, AP (n=82)	6.1	6.7	7.9	8.6

Significant variables: Grade (p-value < .05)
Program (p-value < .05)

Oral Spelling (Gates Oral Spelling)

Oral Spelling (K-3rd)

	2008	2009	2010	2011
LI (n=4)	1.3	2.3	2.8	3.6
Non-Li (n=20)	1.7	2.8	3.8	4.6
Association (n=8)	1.3	2.6	3.1	3.9
SEE, AP (n=16)	1.8	2.8	3.9	4.7

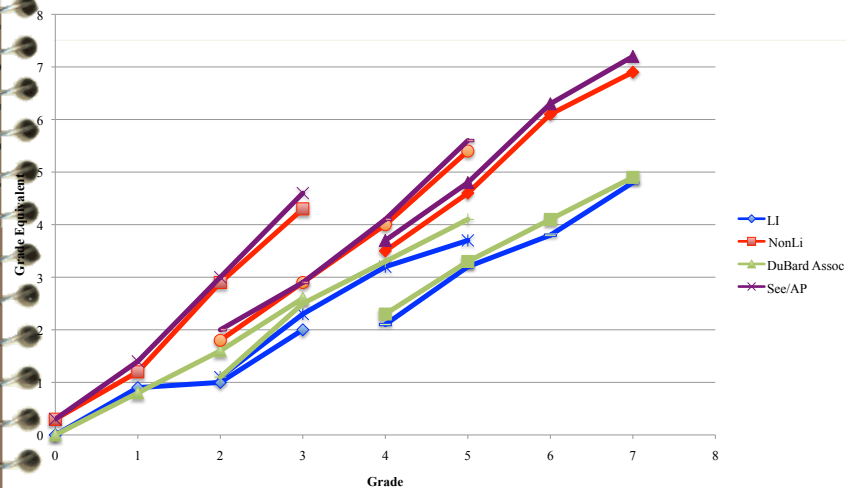
Oral Spelling (2nd-5th)

	2008	2009	2010	2011
LI (n=11)	2	3	3.6	4.2
Non-Li (n=34)	3	3.7	4.3	4.8
Association (n=18)	2.3	3.3	3.8	4.5
SEE, AP (n=27)	3.1	3.7	4.4	4.8

Oral Spelling (4th-7th)

	2008	2009	2010	2011
LI (n=6)	3.5	3.7	4	4.7
Non-Li (n=92)	4.2	4.7	5.7	5.6
Association (n=15)	3.5	3.9	4.3	4.8
SEE, AP (n=82)	4.2	4.7	5.8	5.7

Significant variables: Grade (p-value < .05)
Program (p-value < .05)

Written Spelling (Test of Written Spelling IV)

Written Spelling (K-3rd)

	2008	2009	2010	2011
LI (n=4)	0	0.9	1	2
Non-LI (n=20)	0.3	1.2	2.9	4.3
Association (n=8)	0	0.8	1.6	2.6
SEE, AP (n=16)	0.3	1.4	3	4.6

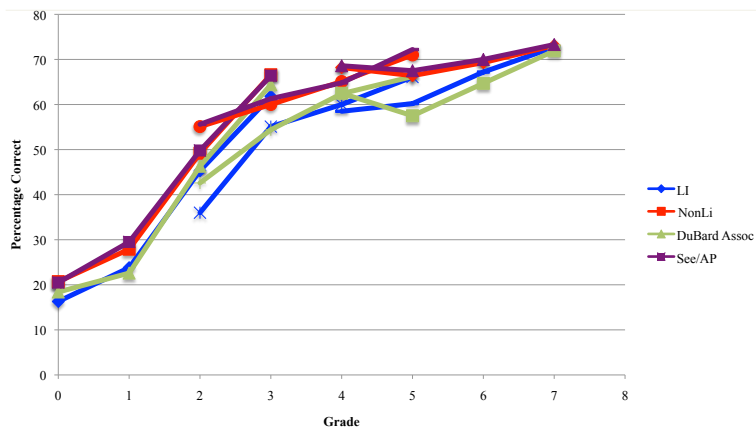
Written Spelling (2nd-5th)

	2008	2009	2010	2011
LI (n=11)	1.1	2.3	3.2	3.7
Non-LI (n=34)	1.8	2.9	4	5.4
Association (n=18)	1.1	2.5	3.3	4.1
SEE, AP (n=27)	2	2.9	4.1	5.6

Written Spelling (4th-7th)

	2008	2009	2010	2011
LI (n=6)	2.1	3.2	3.8	4.8
Non-LI (n=92)	3.5	4.6	6.1	6.9
Association (n=15)	2.3	3.3	4.1	4.9
SEE, AP (n=82)	3.7	4.8	6.3	7.2

Significant variables: Grade (p-value < .05)
Program (p-value < .05)

Writing Mechanics (Spontaneous Writing Sample)

Writing Mechanics (K-3rd)

	2008	2009	2010	2011
LI (n=4)	16.3	23.8	45.3	61.8
Non-Li (n=20)	20.7	27.9	49.2	66.6
Association (n=8)	18.4	22.6	46.3	64.4
SEE, AP (n=16)	20.5	29.5	49.8	66.4

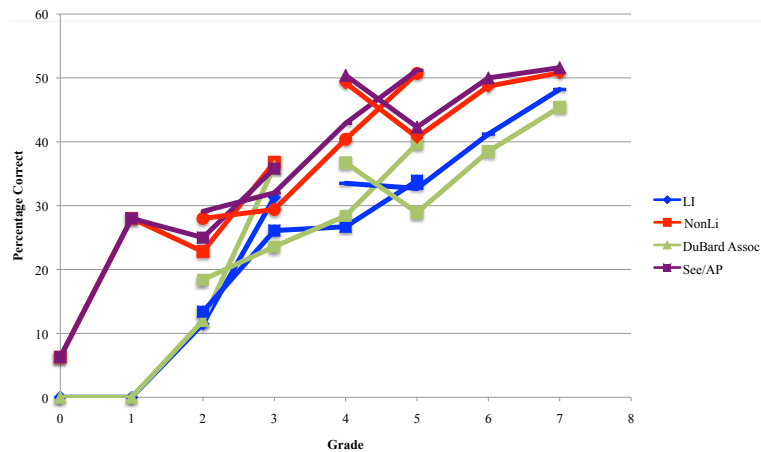
Writing Mechanics (2nd-5th)

	2008	2009	2010	2011
LI (n=11)	36	55.1	60	66.1
Non-Li (n=34)	55.1	60	65.1	71
Association (n=18)	42.6	54.4	62.4	66.2
SEE, AP (n=27)	55.6	61.3	64.8	72.2

Writing Mechanics (4th-7th)

	2008	2009	2010	2011
LI (n=6)	58.5	60.2	67.2	72.7
Non-Li (n=92)	68.2	66.4	69.3	73.1
Association (n=15)	62.5	57.5	64.7	71.9
SEE, AP (n=82)	68.6	67.5	70	73.3

Significant variables: Grade (p-value < .05)
 Program (p-value < .05)

Writing Content (Spontaneous Writing Sample)

Writing Content (K-3rd)

	2008	2009	2010	2011
LI (n=4)	NA	NA	11.5	31.3
Non-Li (n=20)	6.3	28	22.8	36.8
Association (n=8)	NA	NA	12	36.1
SEE, AP (n=16)	6.3	28	25	35.8

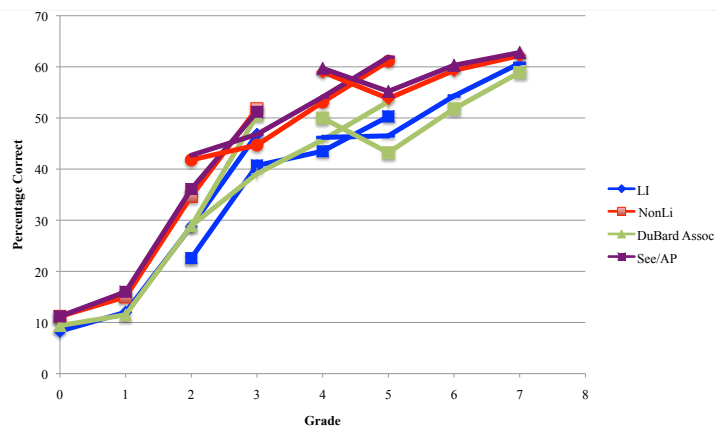
Writing Content (2nd-5th)

	2008	2009	2010	2011
LI (n=11)	13.4	26.1	26.7	33.9
Non-Li (n=34)	28	29.4	40.4	50.7
Association (n=18)	18.4	23.6	28.4	39.7
SEE, AP (n=27)	29.1	32	42.9	51.2

Writing Content (4th-7th)

	2008	2009	2010	2011
LI (n=6)	33.5	32.7	41.2	48.2
Non-Li (n=92)	49.2	40.7	48.7	50.8
Association (n=15)	36.7	28.9	38.5	45.4
SEE, AP (n=82)	50.4	42.3	50	51.6

Significant variables: Grade (p-value < .05)
Program (p-value < .05)

Writing Overall (Spontaneous Writing Sample)

Writing Overall (K-3rd)

	2008	2009	2010	2011
LI (n=4)	8.3	12	28.8	46.8
Non-LI (n=20)	11.2	15	34.7	51.8
Association (n=8)	9.4	11.5	28.9	50.5
SEE, AP (n=16)	11.2	16	36.1	51.2

Writing Overall (2nd-5th)

	2008	2009	2010	2011
LI (n=11)	22.6	40.7	43.5	50.3
Non-LI (n=34)	41.8	44.7	53.1	61.1
Association (n=18)	28.9	39.1	45.7	53.2
SEE, AP (n=27)	42.7	46.8	54.1	61.9

Writing Overall (4th-7th)

	2008	2009	2010	2011
LI (n=6)	46.2	46.5	54.3	60.7
Non-LI (n=92)	59	53.8	59.3	62.2
Association (n=15)	50	43.2	51.8	58.9
SEE, AP (n=82)	59.7	55.2	60.3	62.8

Significant variables: Grade (p-value < .05)
 Program (p-value < .05)

Future Directions

- ✓ Compare LI program to other language programs
 - May help professionals better distinguish which program will be most beneficial to a student based on his or her strengths and weaknesses
- ✓ Use findings to improve educational programs for children with oral language deficits

