BILINGUAL RESEARCH SERIES
Sponsored by: Center for Research and Development in Dual Language and Literacy Acquisition (CRDLLA) and Education Leadership Research Center (ELRC)

English Language and Literacy Acquisition – Validation RCT District Highlights
Grade 1

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External Evaluators: Dr. Robert Slavin, Dr. Alan Cheung, and Dr. Steven Ross, Center for Research and Reform in Education, Johns Hopkins University
ELLA-V = Evidence Based Research

ELLA-V, a randomized control trial study, is based on high quality research and strong evidence yielded through Project ELLA (an IES-funded RCT):

- students who received the K-3 English intervention continued to develop faster than those who did not receive the intervention in English reading fluency and comprehension
- quality English instruction that incorporates direct and focused instruction, context-embedded vocabulary learning, and ongoing professional training is needed to promote bilingualism and biliteracy

- From ELLA-- 12 peer-reviewed articles
  - American Educational Research Journal
  - Elementary School Journal
  - Journal of Educational Research
  - 2 appear in What Works Clearinghouse

10 dissertations
50+ presentations at refereed conferences
1 invited presentation to various program officers within U.S. Dept. of Ed.
1 of 8 validation grants funded in the country in the 3rd cohort

only validation grant on English learners funded to a university and only one awarded for Texas among all 6 cohorts

grant period of performance: January 2013 – December 2017- with an additional year for final evaluation and production work through 2018
To validate, via a randomized control trial (RCT), the intervention components of the original Project ELLA, beginning in grade 3 and working backwards to K (currently in kindergarten)

To determine the degree of impact that each intervention independently has on ELLs’ English oral language, reading, and/or science (Gr. 3)

To determine the impact of bi-weekly professional development (PD) of teachers, but in an altered condition as virtual professional development (VPD)
ELLA-V Design

Step 1
- Select all districts with 6,000+ enrollment
- Select all schools with 60+ ELLs/grade level in 2011-2012

Step 2
- Cluster schools in groups of 3 by district
  - English proficiency (TELPAS composite)
  - % SES
  - % ELL

Step 3
- Randomly assign schools to conditions (T1, T2, C)

Goal: 75 schools, 150 classrooms, 3,000 students/year
School District Partners: G1 (2015-2016)

South Texas:
  - Laredo
  - Brownsville
  - Donna

Central Texas:
  - Bryan

Houston Area:
  - Aldine
  - Houston
  - Spring Branch
District Demographics

- Largest school district in Texas
  - urban
  - 76.5% economically disadvantaged
  - 64.2% at risk
  - 62.1% Hispanic
  - 30.3% English language learners
**Treatment = Intervention**

Level I: Teacher

- **Virtual Bi-weekly Professional Development**
- **Virtual Live Coaching**
- **Virtual Classroom Observation**
Virtual Bi-weekly Professional Development

On-going live virtual PD
- every 2 weeks, 1.5 hours
- Citrix GoToTraining
- interaction via screen sharing, voice, webcam, poll, chat
- recorded sessions
Virtual Bi-weekly Professional Development

Support building a community of practice
  ◦ Teacher spotlight
  ◦ Partner teachers
  ◦ ESL strategy training
  ◦ Reflect on/discuss student learning
  ◦ Preview/discuss upcoming lessons and materials
  ◦ Modeling via video clips
  ◦ Support L2 teachers (pronunciation, scaffolds – script, sentence stems)
  ◦ Blog
Virtual Live Coaching

Live coaching sessions – all treatment teachers
Bug-in-ear (two-way audio)
Teacher self reflection, followed by coaching feedback
Tiered coaching support – fidelity of implementation
  ◦ 1-1 virtual meeting via Citrix GoToMeeting view recorded observation
  ◦ follow up live coaching session
Level II: Student

- 45 minutes/day of enhanced English as a second language (ESL) instruction for 28 weeks
- Curriculum mirrors that of the original Project ELLA
- Lesson plans, curriculum materials, technology provided to the teachers at no cost
Grade 1, Treatment 1
Let’s Talk Science (Fall)

- promotes oral language development and academic vocabulary
- incorporates 5E model (Engage, Explore, Explain, Elaborate, Evaluate)
- includes phonemic awareness activities
- supports first grade science concepts (Note: does not replace science instruction)
Daily, explicit, and systematic reading instruction

Designed for small Groups of 3-5 students,
- Author helped modify curriculum for whole group instruction
- ESL strategies embedded

Incorporates ‘big ideas’ in reading
- Phonemic Awareness
- Letter-Sound Correspondence
- Word Recognition and Spelling
- Fluency
- Comprehension
Grade 1, Treatment 2
STELLA/AOWLS

Story telling, retelling and Higher Order Thinking for English Language and Literacy Acquisition (35 min)

- facilitates interactive story reading between teacher and student
- develops students’ comprehension through the use of higher order questioning and thinking strategies
- provides meaningful and engaging opportunities for children to respond to literature
- expands students’ vocabulary, listening and speaking skills

STELLA
Build Background Vocabulary
Introduce the vocabulary word dandelions. Say, Dandelions are weeds or plants with bright yellow flowers and puffed leaves. When the yellow flowers turn white, you can blow on them and they fly into the air.

Say, In our story, the girl uses her power to make the dandelion. Have you ever blown the white flower of a dandelion? Look for the flowers in the story today.

Read Aloud
Pass out student books of Little Red to share with a partner and place your copy on the document camera. Read the title of the book. Note the author and illustrator.

Invite the students to study the picture on the cover of the book. Say, Does this title and picture remind you of a similar story? Allow time for answers. If students do not respond, share. This story is a lot like the story of Little Red Riding Hood. Ask students to notice the story and allow a few minutes for a volunteer to share the story.

Picture walk and talk through the book, Little Red. Use the questions to prompt student responses.

- Pages 2 and 3: What is the mother doing? (She is sewing on a sewing machine.)
- Pages 4 and 5: What’s in the basket? What do you think it is?
- Pages 6 and 7: Little Red seems to be seeing the wolf. Do you think the wolf is friendly?
- Pages 8 and 9: What does Little Red say to the wolf? (Dandelions) What do you think the wolf is saying? (No, it’s an apple.) Encourage students to respond in complete sentences.
- Pages 10 and 11: Look at these pages and summarize what is happening with your partner. Ask a volunteer to share their thoughts.
- Page 14: Oh, no! What has the wolf done with Grandmother?
- Pages 16 and 17: Look closely at the pictures. What is happening? Share with your partner what is happening.
- Pages 19 and 20: What happened to the wolf? What do you think Little Red is doing with her cell phone?
**Grade 1, Treatment 2**
**STELLA/AOWLS**

**Academic Oral and Written Language in Science** (10 min)

- targets academic vocabulary development
- provides sentence using words in context
- asks a daily question using a target word
- students discuss response with partner, then write response in journal
- presents visual aids for comprehension
Implemented to encourage student involvement and response

1. **Timed Thinking (TT)**— time given for students to think about the question before teacher solicits responses (5 or more seconds of uninterrupted silence)

2. **All students respond:**
   - **Pair-Share (PS)**— students discuss in pairs
   - **Choral Response (CR)**— all students respond together
     - **Visual Cue (VC)**— students respond with visual cue (thumbs up/thumbs down)
     - **Write and Illustrate (WI)**— students use dry erase board to write a short answer or illustrate

3. **Randomness (RAN)**— randomly select student names using craft sticks

4. **Specific Content Feedback (SCF)**— teacher feedback that reinforces the content (Great job describing what you see.)
The expectation is for students to answer the questions, facilitated by teacher through the use of

- Wait time and coaching
- Reword question
- Offer clues
- Break the question into a subset of questions
- Encouraging/supportive tone
- Refer students to the “If I Don’t Know” poster
Grade 1, Control Typical District ESL Instruction

- district standards-based guidelines and resources
- language arts/reading in English, content-area instruction
- scaffolding with pictures/illustrations, cognates, sentence frames, anchor charts
- high frequency words, spelling
- cooperative learning, small groups
Virtual Classroom Observations

Three 45 minute observations during ESL instruction

Secure observation lab

Recordings analyzed via
- Teacher Observation Record (TOR) - fidelity of implementation
- Transitional Bilingual Observation Protocol (TBOP)
  - observe and code instructional events
  - 60, 20-second observations
We look at these domains over time to describe instructional events and practices in the EL classroom.
- Teachers in Treatment 1 were observed more actively to involve students in teacher-student interaction as compared to control condition: ask/ans (p<.01, Cohen’s d = .13), dir/per (p<.01, Cohen’s d = .55), ask/per (p<.01, Cohen’s d = 1.60).
- Teachers in Treatment 2 were observed more actively to involve students in pair-sharing/pair-thinking as compared to control condition: ev/cop (p<.01, Cohen’s d = .81).
Communication Mode by Condition

- Students in Treatment 1 were observed to participate more in listening-speaking ($p<.05$, Cohen’s $d = 0.09$) and listening-writing ($p<.01$, Cohen’s $d = .64$) as compared to control condition.

- Students in Treatment 2 were observed to be engaged more in speaking-listening ($p<.01$, Cohen’s $d = .66$) and listening-reading ($p<.01$, Cohen’s $d = 1.37$) as compared to control condition.
• More dense cognitive content was observed in both treatment conditions as compared to control condition (60.2% in T1, p<.01, Cohen’s d = 0.18; 58.2% in T2, p<.01, Cohen’s d = .12; 50.3% in Control).
• Less light cognitive content was observed in both treatment conditions as compared to control condition (15.3% in T1, p<.01, Cohen’s d = .55; 19.5% in T2, p<.01, Cohen’s d = .33; 26.4% in Control)
Students’ language usage mirrors their teachers’ language usage.
Measures—Student Outcome

- Woodcock Munoz Language Survey-Revised ([WMLS-R], Woodcock, Munoz-Sandoval, Ruef, & Alvarado, 2005), a norm-referenced, standardized instrument to measure language proficiency in reading, writing, listening, and comprehension
  - Picture Vocabulary (reliability: .90)
  - Verbal Analogy (reliability: .84)
  - Story Recall (median reliability: .94)
  - Understanding Directions (median reliability: .84)
  - Letter Word Identification (median reliability: .93)
  - Passage Comprehension (median reliability: .89)
- Age-based scale score was used for analysis (age-based norm: mean =100, std=15)
Measures—Student Outcome

• Dynamic Indicators of Basic Early Literacy Skills ([DIBELS], Good & Kaminiski, 2002)
  • Oral Reading Fluency

• The Test of Phonological Awareness, Second Edition: Plus ([TOPA 2+], Torgesen & Bryant, 2004)

• State assessment
  • Texas English Language Proficiency Assessment System (TELPAS)—state mandated assessment for all ELLs
    • Listening, speaking, and writing-teacher rating
    • Reading-computerized
Individual testing was conducted at the beginning and end of Grade 1.

Because of the clustering nature of the data in this randomized project, analyses were performed within a multilevel framework using the Hierarchical Linear Modeling approach (Raudenbush & Bryk, 2002) to control for statistical overestimation.

A total of 477 students (25 classrooms and 13 schools) were included for the final analysis.

- Treatment 1: 191 students; Treatment 2: 147; Control: 138
- Level-1: $Y_{ij} = \beta_0 + \beta_1(Pretest_{ij}) + e_{ij}$
- Level-2: $\beta_{00} = \gamma_{00} + \gamma_{01}(Treatment_{j}) + U_{0j}$
  $\beta_1 = \gamma_{10}$

SAS (2011) was used for statistical analysis.

Effect size was reported in the form of Cohen’s $d$
  - small 0.2, medium 0.5, large 0.8 (Cohen, 1988)
# Test reliability (Cronbach $\alpha$)

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## Picture Vocabulary by Condition

The graph illustrates the Picture Vocabulary (PV) scores before (PV-Pre) and after (PV-Post) the intervention. The scores are represented by different lines for each condition.

### Table

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Verbal Analogy by Condition

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Understanding Directions by Condition

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### Passage Comprehension by Condition

**Graph Description:**
- The graph shows the change in passage comprehension (PC) from pre- to post-treatment across different conditions.
- The x-axis represents PC-pre, and the y-axis represents PC-post.
- Lines represent the three conditions:
  - **Treatment 1** (blue line)
  - **Treatment 2** (red line)
  - **Control** (gray line)
  - **Norm** (black line)

### Table of Estimates

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### DIBELS by Condition

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### TOPA 2+ Phonological Awareness by Condition

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![Graph showing TOPA 2+ Phonological Awareness by Condition](image-url)
### Self-Esteem by Condition

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## Descriptive Statistics: WMLSR

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### Descriptive Statistics: TOPA 2+

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### Descriptive Statistics: DIBELS

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### Descriptive Statistics: Self-Esteem

<table>
<thead>
<tr>
<th>Test</th>
<th>Pre-test</th>
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<th>Post-test</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>T1</td>
<td>T2</td>
<td>Control</td>
</tr>
<tr>
<td>Self-Esteem</td>
<td></td>
<td>36.23</td>
<td>35.87</td>
<td>36.95</td>
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Discussion

• All significant findings point to the **positive treatment effect**, mostly reflected in oral language proficiency (picture vocabulary and oral cluster) and phonological awareness. Such finding is aligned with the type of intervention that students were exposed to (story telling/retelling in T2 that focused on English oral vocabulary development, and early reading intervention with a focus on phonological awareness in T1)

• We also identified a significant difference in students’ self-esteem on English language among students in treatment 1.

• By the end of Grade 1, the overall performance levels of oral language development was between **1.5-2 standard deviations below** that of the average monolingual speakers of the same grade. Compared to pre-test (beginning Grade 1) of over 2.5 standard deviations below the mean, this suggests that ELLs do need time to fully master academic language in English (August & Hakuta, 1997; Collier, 1987; Cummins, 1984; Genessee & Riches, 2006), and particularly in the domain of oral language development.
• When ELLs were provided with quality intervention, they outperformed their peers who received typical instruction. Thus, an English language development model enhanced with structured, consistent, content-integrated, and standards-aligned curriculum in language and literacy is more effective than a typical practice model (Tong, Irby, Lara-Alecio, & Mathes, 2008).

• Quality professional development sessions that are on-going, intensive, and structured can translate into improved classroom teaching practices for ELLs (Lara-Alecio, Tong, Irby, & Mathes, 2008; Tong, Luo, Irby, Lara-Alecio, & Rivera, 2015).
Practical Applications
Oral Language Development

• Structured practice daily

• Complete sentences
  • Model complete sentences for students.
  • Request students to respond in complete sentences.

• Oral language scaffolds
  • Use visuals (e.g., elicit student talk about photos or drawings).
  • Provide example responses (e.g., answer choices, sentence stems).

• Incorporate content-related themes to stimulate discussion.
Listening Comprehension Development

- Daily read-aloud using authentic children’s literature
- Repeated readings of story
- Use of L1 for clarifications of vocabulary and content
- Preview-review strategy
- Leveled questions strategy
- Interactive read-aloud sessions
Direct Instruction

- 5 strands of reading (phonemic awareness, letter-sound correspondence, word recognition and spelling, fluency, comprehension)
- Vocabulary (STELLA)
- Academic language (oral & written)
Vocabulary Instruction

• Purposeful and careful selection of vocabulary words
  • Tier 1, 2, & 3 words (Beck, McKeown, & Kucan, 2002)

• Pre-teach vocabulary

• Pictures to illustrate vocabulary words
  • For example: picture cards, digital images from Google Image search, magazine/newspaper photos

• Words presented in context
  • Story context (STELLA)
  • Example sentences
  • Sentence stems for student practice

• Word Walls using vocabulary cards w/picture

• Daily review of explicitly taught words
• “ELLA-V has allowed me to develop and practice my pacing and response time in my instruction. It has given me additional ESL strategies that I will be for sure implementing next year.”

• “The implementation of the program in a consistent manner in my classroom has provided the students with the necessary tools to increase their comprehension by previewing the vocabulary. This routine allows my students to easily follow the lesson and increases participation in a more pleasant and comfortable learning environment. Now I have different tools to teach and make my students grow in their learning a second language following a systematic structure.”

• “I consider myself a better teacher because I give extensive and productive lessons, with routines and structure that works.”

• “It has been a great experience, especially for my beginners because they have been pushed to express their thoughts. Even when they try to avoid to answer they know I am going back to them.”

• “It has help me to have a structure, routines and in guiding me in how to implement the different strategies to help my students acquired the English language. In addition, I have improved my English because I have increased my vocabulary.”
<table>
<thead>
<tr>
<th>Staff</th>
<th>Graduate Students</th>
<th>Undergraduate Researchers</th>
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<tbody>
<tr>
<td>Dr. Cindy Guerrero</td>
<td>Nahed AbdelRahmen</td>
<td>Megan Gomez</td>
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<tr>
<td>Tamara Lopez</td>
<td>Donna Druery</td>
<td>Madaline Huizar</td>
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<tr>
<td>Jennifer Alexander</td>
<td>Kara Sutton-Jones</td>
<td>Nery Guerrero</td>
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<td>Sarah Rodriguez</td>
<td>Jui-Teng Li</td>
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<td>Laura Cajiao-Wingenbach</td>
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<td>Raymond Castillo</td>
<td>Yue Min</td>
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<td>David Jimenez</td>
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<td>Lucy Rodriguez</td>
<td>Shuqiong Lin</td>
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<td>Weonjin Shin</td>
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<td>Wenhong Guo</td>
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<td>Zhuoying Wang</td>
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We currently have two proposals under review (i3, IES)

For more information please visit the Center for Research & Development in Dual Language & Literacy Acquisition (CRDLLA) website at ldn.tamu.edu/ella-v