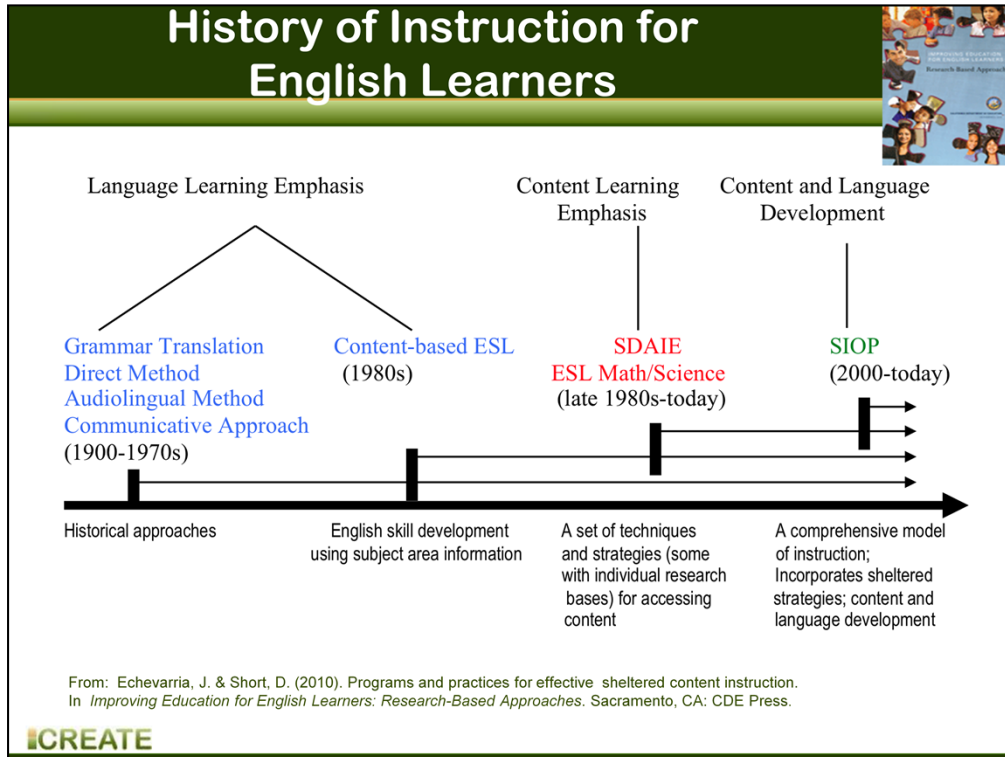




A Brief History of Sheltered Instruction Research and Its Influence on CREATE

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In the late 1980s and early 1990s

- Subject area teachers use some ESL techniques (e.g., visuals, graphic organizers) to make content topics comprehensible.
- The teachers pick and choose favorite techniques.
- There is no attention to learning language through the subject areas.

In the 1990s

- Language teachers realize exited ESL students are not successful in mainstream (regular English-medium, subject area) classrooms.
- State and national tests show ESL students are far below the average scores of native English speakers.
- Language instruction needs to focus more on academic English.

There Was a Growing Need To

Integrate Language + Content in Language *and* Subject Area Classes

- **Content-based ESL** – language teacher
- **Sheltered content instruction** – content teacher



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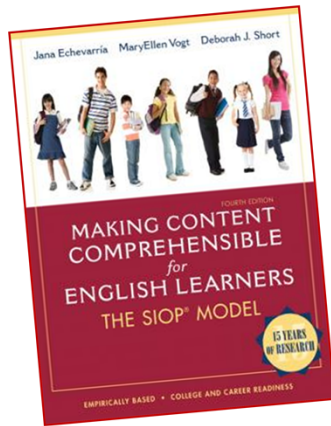
However, at that time

- There was **no systematic model** of content-based ESL or sheltered instruction
- Teachers continued to pick and choose but **no research on which techniques are most effective**
- **Some research on individual techniques** (e.g., jigsaw activity to promote oral interaction) but **no research on combination of techniques and student outcomes**

So, in 1996

- We decided to try to create and test a replicable and effective model of sheltered instruction.
- And you may be familiar with the result...

The SIOP Model



- Lesson Preparation
- Building Background
- Comprehensible Input
- Strategies
- Interaction
- Practice & Application
- Lesson Delivery
- Review & Assessment

The Effects of Sheltered Instruction on the Achievement of LEP Students

- CREDE (Center for Research on Education, Diversity & Excellence) 7-year research and development study (1996–2003)
- Prior to NCLB
- Middle schools on East and West coasts
- Dedicated group of nominated effective teachers (eager, enthusiastic volunteers)
- Teacher-researcher collaboration to build the SIOP Model

Funder: U.S. Department of Education

Researchers: CSULB & CAL

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The Effects of Sheltered Instruction on the Achievement of LEP Students



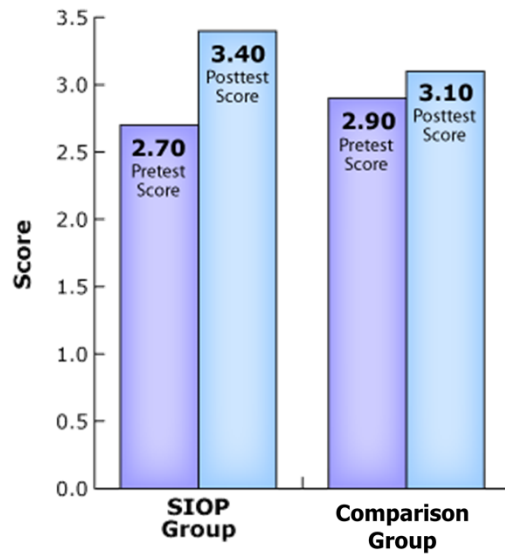
Key Findings

- After several years of field-testing the SIOP, a **validity and reliability study of the instrument** was conducted. Findings showed the SIOP is a highly reliable and valid measure of sheltered instruction (Guarino, et al., 2001).
- 1998-99: Using a prompt for **expository writing**, ELLs in classes with SIOP-trained teachers outperformed and made greater overall gains than ELLs in classes with non-SIOP-trained sheltered teachers on a version of the IMAGE writing test.

(IMAGE exam: Illinois Measure of Annual Growth in English)

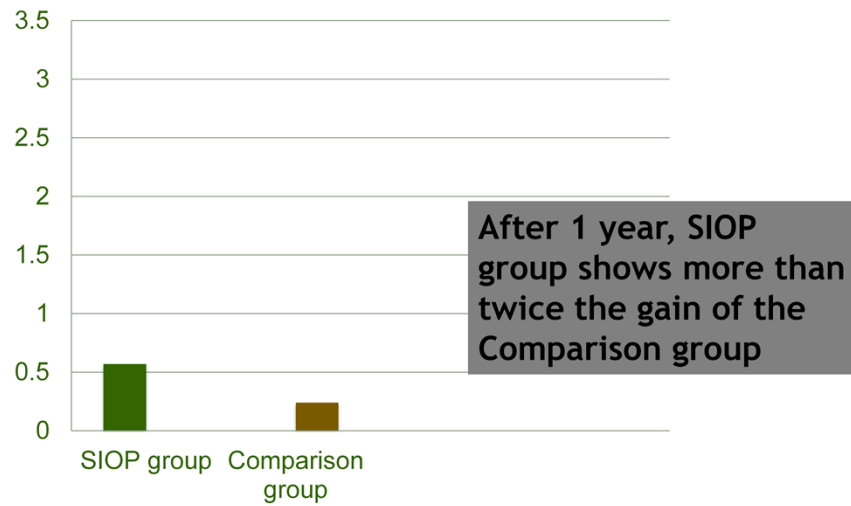
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1999-99 Pre/Post Writing Skills Student Scores on the IMAGE Test



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Writing Gains on the IMAGE test



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Scaling Up: Next Steps

So, the SIOP Model was promising and led to writing achievement. We asked ourselves what should we study next?

- Test the pd with teachers who didn't design the model and track their level of implementation
- Add high school teachers to the mix
- Design a strong quasi-experiment
- Use standardized state outcome measures



NJ SIOP Study: Academic Literacy Through Sheltered Instruction for Secondary ELLs

- **Quasi-Experimental Study (Grades 6-12)**
 - Clifton: Intervention site
 - Other NJ district: Comparison site
- **Intervention**
 - SIOP pd (7 days) for each teacher cohort
 - Onsite coaching
 - Online/web support
- **Data Collection at Both Sites**
 - twice yearly SIOP observations of teachers
 - twice yearly collection of SIOP lesson plans
 - State tests: yearly IPT, Terra Nova 6 & 7/NJ Ask 6 & 7, GEPA, and HSPA scores for students in the study

Funders: Carnegie Corporation of New York & Rockefeller Foundation
Researchers: CAL

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NJ SIOP Study

- Post NCLB, lots of state testing
- Administrative support, including Superintendent
- Voluntary teacher participation (\$ incentive, cynicism then success drove interest)

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NJ SIOP Key Findings



- Teachers can reach high levels of SIOP implementation after 1-2 years (1 year with more support). Sustained, supported professional development (workshops + coaching) works.
- After 1 year, students with SIOP-trained teachers outperformed non-SIOP students *within* the Clifton district on mean scores for oral, reading, writing IPT tests and for total score to statistically significant levels. Same results for Year 2.
- After 2 years, students with SIOP-trained teachers in Clifton outperformed non-SIOP students in comparison district on mean scores for oral, writing and total IPT to statistically significant levels.

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% Teachers with high implementation of SIOF features

	Year 1	Year 2
SIOF Teachers		
Cohort 1 (35)	56%	71%
Cohort 2 (23)	NA	74%
Comparison (19)	5%	17%

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NJ SIOP Study: ANOVA and Effect Sizes

IPT ANOVA and Effect Size Results for Year 2 of the SIOP Intervention

	Treatment		Comparison			<i>t</i>	Sig	Effect size: Cohen's <i>d</i>
	mean	<i>n</i>	mean	<i>n</i>	B Coeff			
IPT Writing	4.32*	267	4.02	168	-.29	-3.12	.00	0.31
IPT Reading	4.10	268	3.97	168	-.12	-1.58	.12	0.16
IPT Oral	4.00*	268	3.66	168	-.32	-2.91	.00	0.29
IPT Total	3.88**	267	3.65	168	-.21	-2.32	.02	0.23

* difference between Treatment and Comparison groups for that year were significant at $p < .01$
 ** difference between Treatment and Comparison groups for that year were significant at $p < .05$

Scaling Up: Next Steps



So SLOP instruction helped middle and high school ELs in oral, writing, and reading skills, and some content. We asked ourselves what shall we refine?

- How to speed up the professional development and strengthen implementation
- How to promote more academic literacy and content achievement among students



Program of Research (2005-2012)

- Program of research to address challenges in the education of EL learners in the middle grades (Grades 4–8) in science, social studies, and ELA.
 - Develop/pilot research-based interventions (Year 1)
 - Test these interventions in controlled experiments/randomized field trials with classroom teachers in sites across the U.S. (Years 2-4)
 - Combine them in a comprehensive package (Year 4)
 - Test effectiveness of the combined package in randomized field trials in one site in Texas (Years 5-6)

Funder: U.S. Department of Education

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The Impact of the SIOP Model on Middle School Science and Language Learning

Years 2-4: Individual Randomized Studies

- ▶ Focus on one content area: Gr 7/8 science
- ▶ Develop jump start SIOP Science curriculum units
- ▶ Design curriculum-based science academic language assessments
- ▶ Randomized experiment (treatment + control groups)
- ▶ Include ELs and English speakers
- ▶ Provided SIOP PD and on-site coaching, controlled by teachers/principals
- ▶ Limited to no administrative interest

Researchers: CSULB & CAL

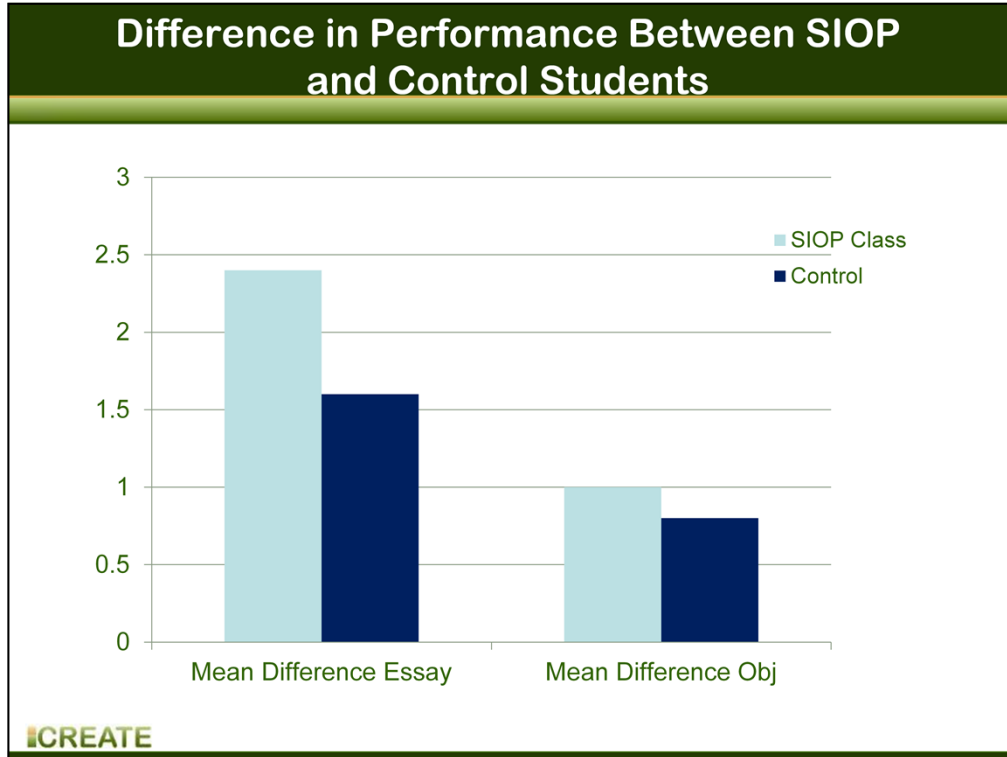


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Key Findings - Student Achievement

- ▶ For all total scores of the tests the SIOB group outperformed the control
- ▶ Analyses of the data indicated this difference was approaching significance



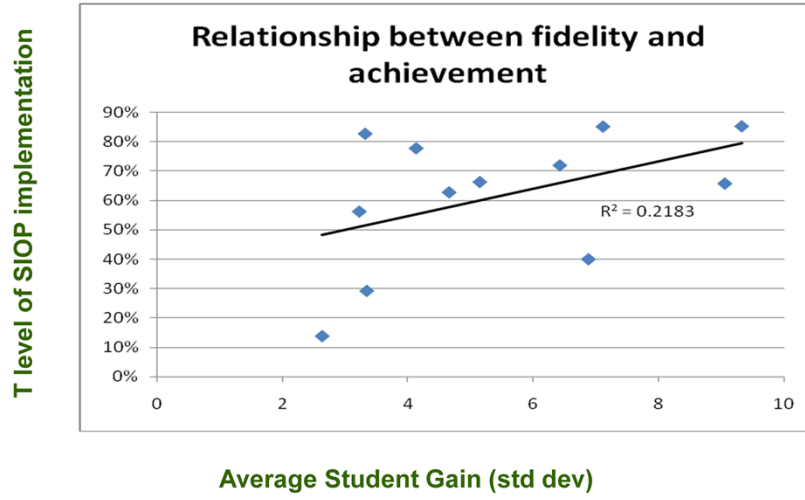


Key Findings – Teacher Implementation of SIOP Features

- The higher the teacher rating on the SIOP protocol, the better the students performed.
- This was true for all subgroups: English Learners, Fluent English Proficient, English Only, and students with disabilities.
- This is true of both SIOP and control teachers.



Relationship of Average Teacher SIOP Performance and Student Outcomes



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Years 2-4: Individual Randomized Studies

- Project QuEST (Science)
 - Investigated a systematic intervention model to concurrently develop science content, and vocabulary, language, and literacy skills in middle school ELLs
 - 6th grade classrooms (Years 2-4)
 - 4th grade classrooms (Year 4)

Years 2-4: Individual Randomized Studies

- Peer-Assisted Learning in Social Studies:
 - Social studies curriculum units enhanced with specific instructional and learning strategies, supplemental materials, and purposeful pairing of students
 - Content knowledge acquisition and vocabulary/concept learning using systematic practices associated with improved outcomes for ELLs in middle school content classes.

Years 2-4: Individual Randomized Studies

- Word Generation (ELA):
 - Focused on development of academic vocabulary through a daily 15-20 minute intervention
 - Involved reading, writing, and discussion/debate regarding current or controversial issues



Years 5-6: School-Wide Intervention

- Four related CREATE studies merge into a school-wide intervention
- Target: 7th grade English learners in social studies, science, ELA, and math
- Curriculum interventions for science, social studies, and English language arts would infuse SIOF features
- Curriculum-based measures of content and language + Gates McGinitie

Years 5-6: School-Wide Intervention

Intervention lessons include

- content and language objectives
- general academic and content-specific vocabulary words
- peer-assisted learning and structured pair work
- short video clips to build background
- reading and writing activities

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Years 5-6: School-Wide Intervention

- SLOP Model becomes the professional development framework and showcases techniques from the curriculum interventions (summer SLOP Model pd)
- Separate curriculum intervention training
 - by subject area: QuEST (science), Word Generation (English language arts), & Peer-Assisted Social Studies in fall
- Instructional Support Specialists coach on the curriculum interventions and SLOP instruction throughout school year
 - all teachers, weekly school visits
 - widely available, but controlled by teachers/principals

Coaching design

- Flexible and Responsive
- 3 Phases

Initial Coaching Phase (Weeks 1–3)

- Once a week
- Informal classroom visit
- Focus on building rapport and guiding implementation through modeling and demonstration lessons
- Post classroom visit conferences

Coaching with Feedback Phase (Weeks 4–8)

- Biweekly
- Scheduled, formal observations with debriefing session
- Follow-up through additional meetings, phone calls, email correspondence

Transitional Coaching Phase (Weeks 9 and on)

- Biweekly formal, scheduled observation with debriefing session or conferencing/ planning meeting
- Meetings with grade-levels or content specific teams
- Individual conferences as needed

Ms. Ramos, Grade 7 Texas History Teaching Style Changes

- Incorporates language objectives and attention to vocabulary
- Builds background with brief video clips
- Pairs students frequently (turn and talk, paired reading)
- Incorporates writing with student packets

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Study 1 (Year 5)

- True Experiment conducted over one school year
- 8 Middle Schools (4 Treatment / 4 Control)
- Matched schools, then Randomized school level groups
- Pre-Post Design
- Pre-Test, Fall 2009 / Post-Test, Spring 2010

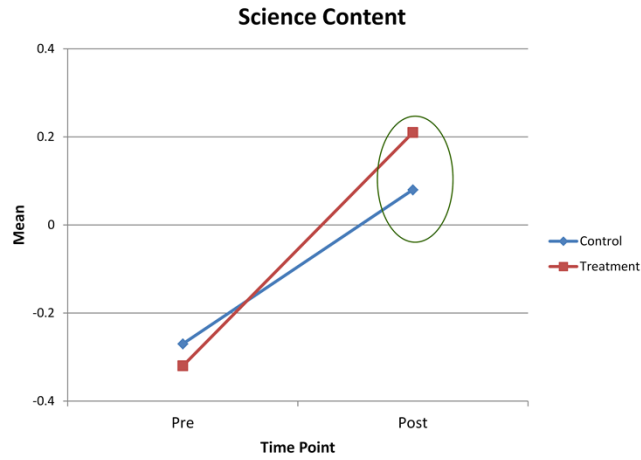
Study 2 (Years 5-6)

- Quasi-experiment conducted over two years
- Control schools from Study 1 get Treatment in year 2 (3 + 1 new = 4 schools)
- Longitudinal with Pre-test and Post-test in each year (total of four time points)
 - 2009-10 Control Year (Pre-test in Fall / Post-test in Spring);
 - 2010-11 Treatment Year (Pre-test in Fall / Post-test in Spring)

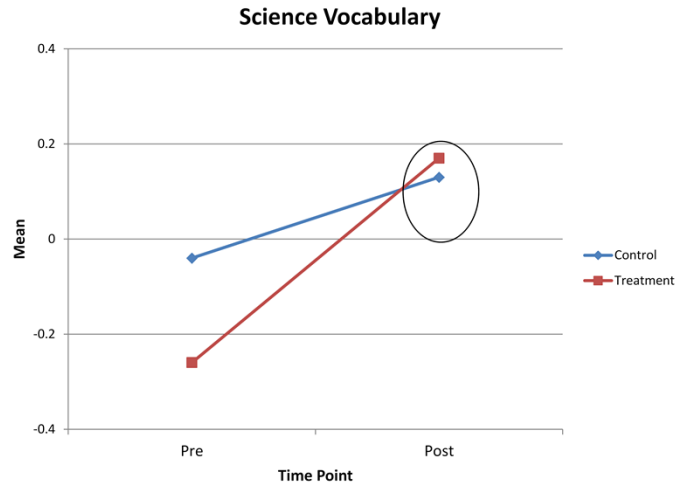
Key Findings: Student Achievement

- Study 1
 - Significant (positive) treatment effects for all measures except GATES reading comprehension
- Study 2
 - Significant (positive) treatment effects for all measures except GATES reading comprehension

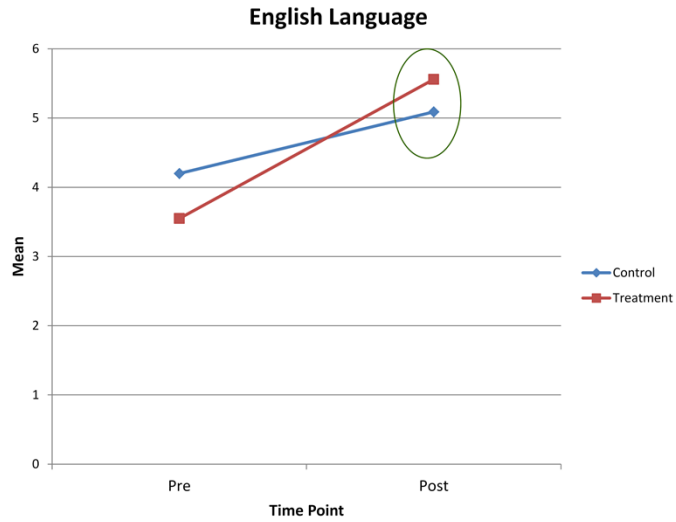
Study 1 Results – Science Content



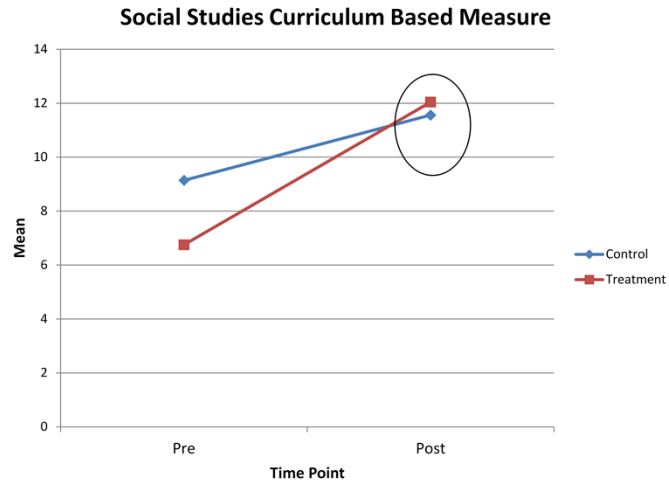
Study 1 Results – Science Vocabulary



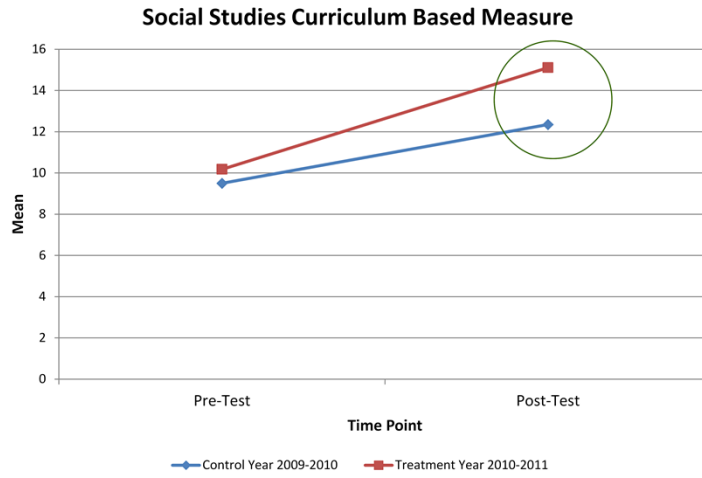
Study 1 Results – Science English Language



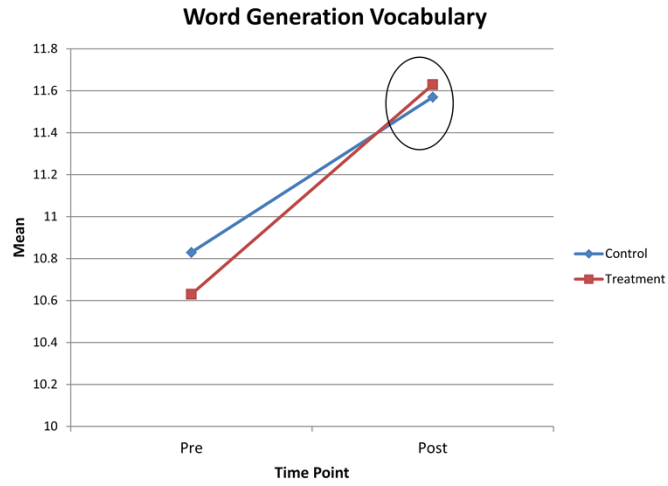
Study 1 Results – Social Studies



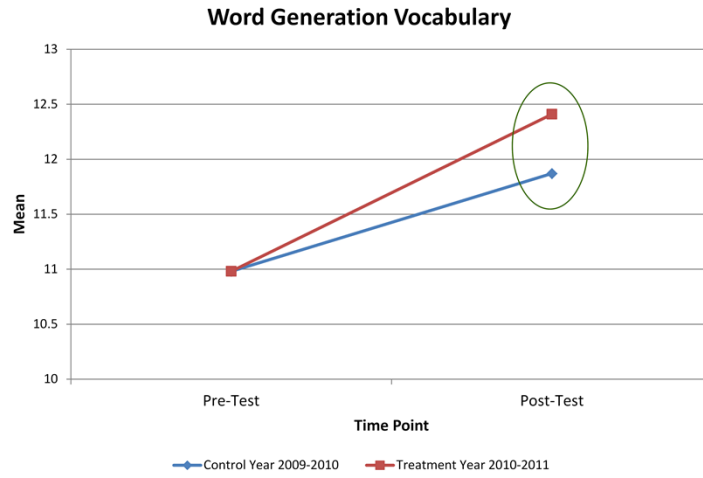
Study 2 Results – Social Studies



Study 1 Results – Word Generation



Study 2 Results - Word Generation



15 years of Research on Sheltered Instruction



- Sheltered instruction can make a difference. EL and English speaker literacy and content achievement rise.
- The greater the teacher level of implementation, the better the student performance.
- Teacher buy-in makes a difference.
- Ongoing, job-embedded pd is needed.
- It takes teachers 1 – 2 years to reach consistent high levels of implementation.
- Coaching leads to higher levels of implementation.
- Administrative support makes a difference.

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Lessons Learned

To help students achieve in the middle grades,
what we need is

- Targeted professional development for teachers that
 - Is job-embedded
 - Sustained throughout one year
 - Supported by coaching
- Curricula that integrate vocabulary and academic language/literacy instruction and practice with content concepts
- Fidelity to intervention

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Directions for Future Research on Sheltered Instruction

- Investigate effects on student achievement after professional development, when medium to high levels of implementation are reached.
- Conduct longitudinal studies on same students over time with continuous exposure to the model of sheltered instruction.

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Thank You

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