Benefits of SLP-Educator Collaboration in Classrooms

QUESTION: Do students benefit from SLP-Educator collaboration in the classroom?

✓ Yes, speech language pathologists (SLP) working hand-in-hand with educators in classrooms can lead to language & communication gains

- Collaboration is more effective than: pullout delivery or SLP-educator working independently in the classroom for gains in curricular vocabulary
- Collaboration leads to better basic concept knowledge and more generalization than regular education programs
- Collaboration has positive benefits for targeted grammatical forms, story telling skills, and formulating complete utterances

✓ Yes, SLP-educator classroom collaboration or co-teaching results in enriched academic outcomes

- Collaboration leads to improved phonological awareness, print knowledge, and writing skills in early elementary grades
- Partnerships to facilitate the use of modified instructional language in the classroom for adolescents with language impairment results in better listening skills, and written expression
- Collaboration promotes exchange of ideas between SLP and educator, carryover by teachers, teacher input about curriculum-relevant communication goals, and SLP input about communication strategies and needs

✓ Yes, educational SLPs collaborating with educators can assist with the delivery of differentiated instruction through a tiered service delivery model

- Collaboration increases effectiveness of Tier 1 intervention
- Collaboration facilitates smoother transition for children who move between Tiers
- Collaboration provides more opportunities for differentiated instruction

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Collaboration: More Than “Working Together”

Knowing different models and configurations of service delivery is valuable in planning and implementing services for children. It is important that professionals use the models of service delivery strategically in order to address the needs of students throughout the intervention period. Each model of service delivery has strengths and weaknesses and therefore it is the responsibility of professionals to determine when to use each model. For example, a child who only had an articulation delay might initially benefit the most from a multidisciplinary approach to intervention where the S-LP works with the child in pull-out sessions to elicit the correct articulation of a sound. Once the child is able to produce the sound consistently, perhaps an interdisciplinary approach to service delivery would be appropriate where the S-LP would be drifting throughout the classroom while the children are engaged in a partner work, occasionally assisting the child with the articulation delay to correctly produce the target sound. In this manifestation of the interdisciplinary model, the teacher would be responsible for designing the classroom activity and for the education of all the students in the classroom and the S-LP would be responsible for...
Classroom-based language intervention: Review of current evidence

Lisa Archibald, PhD
Western University

Overview

1. Service delivery models
2. Classroom-based interventions – what does the evidence say?
   - Vocabulary & concept knowledge
   - Oral language
   - Curriculum-based goals
   - Phonological awareness & literacy
   - Writing
   - Speech
3. Establishing effective partnerships

Why Classroom-based Services?

• Impact / efficiency of S&L services
  - It is nothing short of foolhardy to make enormous investments in remedial instruction and then return children to classroom instruction that will not serve to maintain the gains they made in the remedial program (Snow et al., 1998, p. 258, National Research Council)

Why Classroom-based Services?

• Inclusion
  - Just putting a child in a group does not necessarily mean that child will become part of the group
  - Ability to cooperate in a group affected by:
    - language / communication skills
    - social competence
  - Challenge for children with communication disorders
    Brinton et al. (2000)

Why Classroom-based Services?

• Curriculum access
  - All students should have equal access to educational opportunities (Education Act)
  - Academic Curriculum
    - Rigorous content
    - Requires deep understanding, reasoning, problem solving
  - Focus on classroom instruction

Why Classroom-based Services?

• Undifferentiated instruction
  - not adequate for students with disabilities such as developmental language disorder (DLD)
    - Educational activities themselves pose a barrier to access (e.g., reading or language level is too challenging)
• Differentiated instruction
  - Tailoring instruction to meet individual needs in the classroom
Silliman et al. (2000)

- **Scaffolding**
  - Temporary support to assist learners in completing a task they might not otherwise complete
  - Dynamic: finely tuned to the learner’s ongoing progress

- **Directive scaffolding**
  - Knowledge transmission
  - Student is empty container
    - Lacks content
    - So, lacks competence
  - Teacher-directed learning
    - IRE sequences
      - Initiation by adult
      - Response by student
      - Evaluation by adult

- **Supportive scaffolding**
  - Instructional conversation
  - Student needs to learn how to learn
  - Assisted problem solving
    1. Explicit modeling (think-aloud)
    2. Direct explanations
    3. Invitations to participate
    4. Feedback / clarifications

**Is there evidence that we need both?**

Lovett et al. (1994) – Effective reading instruction requires

- Explicit instruction in phonemic segmentation, blending, phoneme-grapheme segmentation
- Directed scaffolding focusing on problem-solving strategies for analyzing phoneme-grapheme relationships
- Supportive scaffolding

(Both strategies are used in EMPOWER™ Reading)

**Silliman et al. (2000)**

- Followed 2 students with learning disability (LD; 8-9 yrs), and 2 typically developing peers (TD; 6 yrs)
- ‘Inclusion classroom’ – educational team including SLP
- Emergent reading (small) groups by
  - Classroom teacher
  - Special education teacher
- Videotaped 13 sessions; coded for scaffolding type

**Silliman et al. (2000)**

- Results
  - >99% of all sequences were directive
  - No differentiation based on participant learning status
  - So, these highly skilled teachers immersed in a critical thinking framework for teaching were unable to provide meaningful differentiated instruction in small groups

**Scaffolding Types**

- **Directive scaffolding**
  - Direct teaching of concept or skill
  - Prompting to elicit content (presumed known)
  - Accuracy-based feedback

- **Subjective scaffolding**
  - Demonstration of thinking process
  - Expands or draws connections to understanding of concept
  - Elicit expansions or reasons
  - Responsive feedback or requests for clarification
Other Negative Evidence

• From preschool populations
  – Low exposure to high-quality language (Turnbull et al., 2009)
  – Low use of language strategies such as modeling, expansion (Bickford-Smith et al., 2005)
  – High use of directive (Girolametto et al., 2003) & ‘here-and-now’ language (Dickinson & Tabors, 1991)
  – Models are insufficient to promote language growth (Turnbull et al., 2009)

Why Classroom-based Services?

• Providing differentiated instruction in a large class is difficult (Myhill & Warren, 2005)

• Difficulties children with DLD experience may be missed by the classroom teacher (Palincsar et al., 2000)

Why Classroom-based Services?

• The presence of a specialist in the classroom with expert understanding of DLD may permit more effective implementation of a differentiated instruction framework

• No one person/profession has sufficient expertise to execute all of the functions associated with providing educational services to all children in the classroom (Hadley et al., 2000)

Why Classroom-based Services

Potential benefits
• Increase SLP knowledge of curriculum
• Increase teacher’s strategies with children with communication disorders
• Improve generalization
• Serve larger population (‘at-risk’)
• Children don’t miss instructional time

Barriers
• Must maintain role differentiation (‘added value’ NOT teacher’s aide)
• Must maintain therapeutic focus & well-articulated goals – ‘going with the flow’ problematic
• Time, scheduling, planning challenges
• Lack of understanding of each other’s expertise

Vocabulary – Throneburg et al., 2000

<table>
<thead>
<tr>
<th>Pull out</th>
<th>Classroom-based services</th>
<th>Collaborative Co-teaching</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 min / wk</td>
<td>SLP taught same vocab but teacher not involved, not present</td>
<td>SLP &amp; teacher met weekly (40 min ea.); identified vocab &amp; plan</td>
</tr>
<tr>
<td>Target vocab &amp; other appropriate goals</td>
<td>Team taught in class, 5 targets/wk (40 min, 1/wk: 12wks)</td>
<td></td>
</tr>
<tr>
<td>1 class ea. K, gr. 1, 2, 3 (n=43, 9 S&amp;L)</td>
<td>1 class ea. K, gr. 1, 2, 3 (n=60; 11 S&amp;L)</td>
<td>1 class ea. K, gr. 1, 2, 3 (n=74; 12 S&amp;L)</td>
</tr>
<tr>
<td>Randomly assigned from 2nd school</td>
<td>Randomly assigned from 2nd school</td>
<td>Target school</td>
</tr>
</tbody>
</table>

Vocabulary – Throneburg et al., 2000

• Outcome measure
  – Total target word corpus per grade = 60
  – 20 randomly chosen for pre vs. post test
• Tasks:
  • Define word verbally
  • Use word in a sentence
  • Recognize the word’s meaning from choice of 2
• Scoring:
  • 4 points (precise, vague, incorrect, no response)
SAC Webinar
January 2019

Vocabulary – Throneburg et al., 2000

- Compelling evidence
  - Advantage for classroom-based team-teaching models over pullout intervention for targeted vocabulary
  - Lots of planning time!

Classroom-based Services

- SLP collaborative consultation benefits
- Vocabulary
  - Targeted – compelling evidence
  - Generalization – suggestive evidence

Narrative Language – Gillam et al., 2014

- Outcome measure
  - Narrative probe (child tells story from a single picture)
    - Rubrics for scoring:
      - Macrostructure – character, setting, initiating event, internal response, plan, attempt, consequence
      - Microstructure – coordinated & subordinated conjunctions, adverbs, metacognitive verbs, elaborated noun phrases
    - Vocabulary probe (criterion-referenced)
      - Story grammar, literacy knowledge, feelings, verbs, adjectives; “Tell me what the X means”
      - Rubric for scoring: incorrect/no response, some related description, accurate information resembling a definition
    - Pre & post testing
Narrative Language – Gillam et al., 2014

- Highly suggestive evidence
  - Classroom-based narrative language with embedded vocabulary instruction can lead to clinically significant change in:
    - Narrative language
    - Vocabulary (but perhaps not sufficient for kids with lowest skills)

- **SKILL**
  - Supporting Knowledge in Language & Literacy

Created based on reported data

Classroom-based Services

- SLP collaborative consultation benefits
  - Vocabulary
    - Targeted – compelling evidence
    - Generalization – suggestive evidence
  - Oral language
    - Narrative – highly suggestive
    - Targeted expressive grammar – suggestive
      - Improvements, not mastery?

Literacy-related

- Phonological awareness
  - Rhyme; phoneme awareness
- (Emergent literacy)
  - Print concepts
- Curriculum-based language
- Writing

Phonological Aw. – Hadley et al., 2000

- Outcome measures (pre/Sept – post/April)
  - Phonological Awareness & Literacy Screening (PALS; Swank et al., 1997) grade-level subtests
    - Rhyme awareness
    - Initial sound awareness
    - Syllable deletion
    - Phoneme deletion
  - Vocabulary
    - PPVT-III; EVT
Classroom-based Services

- SLP collaborative consultation benefits
  - Vocabulary
    - Targeted – compelling evidence
    - Generalization – suggestive evidence
  - Oral language
    - Narrative – highly suggestive
    - Targeted expressive grammar – suggestive
    - Improvements, not mastery?
  - Literacy-related
    - Phonological awareness – compelling evidence

CBL – Bland & Prelock, 1996

- Outcome measure
  - Fall & Spring for 3 years!
- Language samples
  - 100-200 utterances on conversational topics
  - Coded for
    - Number of different words
    - Mean length of utterance (morphemes)
    - Utterance completeness
    - Utterance intelligibility

CBL – Bland & Prelock, 1996

- Collaborative classroom model with at-risk K/gr.1
  - Improved phonological awareness
  - Improved generalized vocabulary
  - Highly suggestive of added value

CBL – Bland & Prelock, 1996

- Language-in-Classroom:
  1. Transdisciplinary training (7@2hrs)
  2. Wkly planning (30-45 min) – establish common goals, activities
  3. In class, wkly, 30-45 min, team taught by SLP, teacher & assistant

- 7 DLD, grades 1-4
- Matched to exp’tl group

CBL – Bland & Prelock, 1996

- Results:
  - No group differences on
    - Number of different words
    - Mean length of utterances
  - Expt’l group > Control group
    - Number of intelligible utterances
    - Number of complete utterances
CBL – Bland & Prelock, 1996

• Suggestive evidence
  – No difference in pull-out vs classroom-based services for expressive form
  – Connected discourse advantage for classroom-based services
  – Consistent with focus of the Language-In-Classroom (LIC) program on communication effectiveness
  – Presence of SLP/collaborative framework may be necessary to achieve high quality language & literacy instruction (Justice et al., 2009)

CBL/Instructional Language – Starling et al. 2012

• Targeted modifications:
  – Whole class morphemic analysis of words
  – Identifying specialized vocabulary
  – Providing an outline of lesson
  – Allowing time for processing & responding
  – Whole class deconstruction of complex texts
  – Explicit rather than inferred instructions

• Collaborative training
  – Delayed start after 1 school term without training
  – Schools were randomly chosen
  – 6 Secondary school teachers with at least 1 DLD student in class in another school
  – 22 students with DLD

• Outcome measures
  – Pre/post testing
  – Teacher modification use
    – Levels of Use interview
      – Coded modification use on 8 level continuum
  – Student outcomes
    – Reading comprehension; written expression; listening comprehension; oral expression (WIAT-III)

CBL/Instructional Language – Starling et al. 2012

• Results: Teacher ratings of use

<table>
<thead>
<tr>
<th></th>
<th>Pre-Use rating</th>
<th>Post-Use rating</th>
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<tbody>
<tr>
<td>Trained teachers</td>
<td>Nonuse (0)</td>
<td>Mechanical use (3) Routine, refined, or integrated use (4-6)</td>
</tr>
<tr>
<td>Untrained teachers</td>
<td>Nonuse (0)</td>
<td>Nonuse; orientation (0-1)</td>
</tr>
</tbody>
</table>

CBL/Instructional Language – Starling et al. 2012

• Results: Student outcomes
CBL/Instructional Language – Starling et al. 2012

- Collaborative training
  - Increased mainstream secondary teachers’ instructional language practices
  - Improvements in language abilities of adolescents with DLD
  - Presence of SLP/collaborative framework facilitated implementation of differentiated instruction

Classroom-based Services

- SLP collaborative consultation benefits
  - Vocabulary
    - Targeted – compelling evidence
    - Generalization – suggestive evidence
  - Oral language
    - Narrative – highly suggestive
    - Targeted expressive grammar – suggestive
    - Improvements, not mastery?
  - Literacy-related
    - Phonological awareness – compelling evidence
    - Emergent literacy – compelling evidence
    - School age curriculum-based language – preliminary
    - Instructional language use – highly suggestive

Writing – Nelson & Van Meter, 2006

- Writing lab approach
  - 3x/wk; 45-60 min.; over the school year; gr. 1-5
  - Teacher & SLP – planning & implementation
  - Curriculum-based writing
    - Recursive writing: Planning, organizing, drafting, revising, editing, publishing, presenting
    - Authentic projects: author chair, peer conferencing
    - Language targets: discourse, sentences, words, writing conventions, spoken communication

Writing – Nelson & Van Meter, 2006

- Results
  - Case studies & preliminary results document growth in all language targets for typically developing, DLD, and English learners (Nelson et al., 2004; Nelson & Van Meter, 2006)
  - Practice-based evidence

Classroom-based Services

- SLP collaborative consultation benefits
  - Vocabulary
    - Targeted – compelling evidence
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    - Phonological awareness – compelling evidence
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    - School age curriculum-based language – preliminary
    - Instructional language use – highly suggestive

What about speech?

- Benfiel, 2000 (Unpublished thesis)
  - SLP behaviours & child practice
  - Children with language-only vs. articulation-only delays
  - Equal amounts of classroom vs. pull out treatment
Speech – Benfiel, 2000

**Pull out**
- 2x/wk; 20-min
- Individually or in pairs
- Separate room
- Curricular narrative materials used to target child’s goals
- 9 gr. 1-2 children in 5 classes – 4 DLD; 5 articulation delay only

**Classroom-based Co-teaching**
- One-teach/one-drift model
- 30 min/wk during language arts
- Teacher taught curricular lesson; SLP targeted child’s goals using curricular materials
- SLP & teacher met wkly for 30 min.
- 9 gr. 1-2 children in 5 classes – 4 DLD; 5 articulation delay only

**Outcome measures:**
- 40 min. of treatment observed
  - 3x in school year: mid-Oct; February; April
- SLP behaviours counted
  - Models; elicitation/production practice; feedback
  - Relevant to the child’s goal
- Child productions
  - An attempt to produce the target behaviour

**Results:** SLP behaviours

No context difference for language goals
More speech-related behaviours in pull-out
Speech behaviours decreased over time

**Results:** Child productions

No context difference for language goals
More speech productions in pull-out
Speech behaviours decreased over time

**Classroom-based Services**

- SLP collaborative consultation benefits
  - Vocabulary
    - Targeted – compelling evidence
    - Generalization – suggestive evidence
  - Oral language
    - Narrative – highly suggestive
    - Targeted expressive grammar – suggestive
    - Improvements, not mastery?
  - Literacy-related
    - Phonological awareness – compelling evidence
    - Emergent literacy – compelling evidence
    - School age curriculum-based language – preliminary
    - Writing – practice-based evidence
  - Speech
    - Suggestive negative evidence

**Classroom-based intervention**
- Language opportunities might be similar to that provided during pull-out sessions
- Not efficient for goals focused on speech production
Classroom-based Services

- Remember!
  - classroom-based services are not always enough!
  - specific grammatical targets
  - speech targets
  - need to keep advocating for Tier 2 & 3 services

- How to?
  - begin in a small way
  - with someone you can work well with
  - share expertise
    - classroom skills
    - language & communication
  - targeted skills with evidence
    - narratives; vocabulary; literacy-related
    - invest in collaboration!

Future Research – Let’s do it!

- Ideas:
  - Writing better sentences: Sentence-combining (Saddler & Asaro-Saddler, 2010)
  - Drawing pictures during scientific learning (Schmeck et al., 2014)
  - Supportive scaffolding in guided inquiry
  - Oral language participation during problem-based learning in later grades
  - Reading motivation

Stages of Collaboration

- Co-activity
  - resembles parallel play; separate instructional activities with little sharing of ideas
- Cooperation
  - jointly establishing general goals (not individual goals)
- Coordination
  - sharing opinions & instructional strategies related to specific students; no role release
- Collaboration
  - informal networking & sharing of responsibilities; high degree of trust & respect

Elkonin & Capilouto, (1994)

Practice-based Research

- Gathering information from practice, to answer questions arising from practice, in order to inform future practice
  - Epstein (2001)

- We’re on it at Western!
  - so call me!

Thank you!

- To contact me...
  - larchiba@uwo.ca
  - Lab website
    - http://www.uwo.ca/fhs/lwm/
  - Lab blog
    - http://www.canadianslp.blogspot.com/
  - Twitter
    - @larchiba6
  - Pinterest
    - www.pinterest.com/lisaarchibald
<table>
<thead>
<tr>
<th>Study</th>
<th>Sample</th>
<th>Intervention groups</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silliman et al., 2000 (St)</td>
<td>2 primary students with learning disability 2 typical primary level</td>
<td>Observed in 13 sessions over 8 wks in emergent reading grp with either general or special education teacher; scaffolding categorized as directive or subjective</td>
<td>&lt;1% of all sequences were supportive; no differentiation based on learning status</td>
</tr>
<tr>
<td>Palincsar et al., 2000 (St)</td>
<td>Case study of 1 fourth grade student with LD</td>
<td>Observed during guided inquiry science lesson in small group work</td>
<td>Child has important contributions but difficulty gaining group access without researcher support; teacher not always able to provide</td>
</tr>
<tr>
<td>Throneburg et al., 2000 (C)</td>
<td>K-gr. 3, 4 classes ea: Collab. (n=74;12 S&amp;L Classroom (n=60;11 S&amp;L Pull out (n=43; 9 S&amp;L) random assignment for 2 control conditions</td>
<td>Collaboration – joint planning (40min/wk); team taught 5 targets/wk in 40 min weekly session for 12 wks Classroom – SLP taught same vocab on same schedule but teacher not involved Pull out – 50min/wk; target vocab &amp; other goals</td>
<td>Greater gain on targeted vocab. for collaboration &amp; classroom than pull out for all kids; greater gain for S&amp;L kids in collaboration than either classroom or pullout</td>
</tr>
<tr>
<td>Wilcox et al., 1991 (S+)</td>
<td>Preschool, DLD 10 in classroom 10 individual</td>
<td>Play-based interactive modeling of 10 target words; team implementation in classroom; min. 10 models/target for 24 sessions</td>
<td>No diff. on target wrds Class. &gt; Ind. On generalization measure</td>
</tr>
<tr>
<td>Hadley et al., 2000 (S+)</td>
<td>K-gr. 1, at-risk 2 collab. classes (n=46) 2 control classes (n=40)</td>
<td>Collaboration – joint planning (1hr/wk); 20 words/concepts ea. wk; SLP 2.5 days/wk Control – para professional on same schedule</td>
<td>Collab &gt; control -vocab (PPVT; EVT) *see also ph. aw. Section</td>
</tr>
<tr>
<td>Valdez &amp; Montgomery, 1997 (S-)</td>
<td>Preschool, DLD 20 in classroom 20 pull-out</td>
<td>90 min @ 1/wk for 6 months Collab: joint identification of goals, planning, implementation Both targeted concept develop.</td>
<td>No. group diff. in gain on CELF total &amp; exp. language score (pull out- greater rec. gain)</td>
</tr>
<tr>
<td>Ellis et al., 1995 (S)</td>
<td>K, at-risk 1 consult class (n=20) 1 control class (n=20)</td>
<td>Consult – SLP &amp; teachers selected concepts; SLP provided ideas in weekly meetings; Control-business as usual</td>
<td>Consult &gt; control for target concepts; no diff. on untrained concepts</td>
</tr>
<tr>
<td>Gillam et al., 2014 (S+)</td>
<td>Gr. 1, low &amp; high risk (LR/HR) 1 Exptl class (n=10/11) 1 Business-as-usual (n=7/12)</td>
<td>Exptl – SLP provides narrative language instr. In classroom 30 min, 3x/wk for 6 wks Business-as-usual – student SLP assisted teacher on same schedule</td>
<td>Narrative gains in exptl clinically significant for high risk group Targeted vocab. gains in exptl with low risk group showing greatest gains</td>
</tr>
<tr>
<td>Smith-Lock et al., 2013 (S)</td>
<td>School for DLD, 5 y.o., random assigned to: Exptl (n=22) Control (n=18)</td>
<td>Exptl – 3 expressive goals: SLP in classroom 1/wk for 1 hr, 8 wks; class lesson, then 3 small grp led by teacher, assistant &amp; SLP Control – business as usual with focus on comprehension</td>
<td>Exptl &gt; control on treated but not untreated grammatical targets *Need to specific focus on gram. target</td>
</tr>
<tr>
<td>Spencer et al., 2015 (S+)</td>
<td>Preschool, at-risk 2 Exptl classes (n=36) 2 Business-as-usual (n=35)</td>
<td>Exptl – whole class narr. lang. program: model, gestures, retell 4x/wk for 3 wks, 15-20 min ea.</td>
<td>Exptl &gt; control story retell &amp; comp. No diff. on story production</td>
</tr>
<tr>
<td>Motsch et al., 2008 (S)</td>
<td>Schools for DLD, 8-10 y.o. (in Germany) 23 Exptl classes (n=63) 22 Control classes (n=63)</td>
<td>Exptl – 6-weeks daily incorporation of training on grammatical targets focusing on context with well-controlled, known vocab Control – itargets incorporated as possible</td>
<td>Exptl &gt; control on trained targets, but performance did not reach mastery</td>
</tr>
<tr>
<td>Hadley et al., 2000 (S+)</td>
<td>K-gr. 1, at-risk 2 collab. classes (n=46) 2 control classes (n=40)</td>
<td>*See vocab. section Collaboration included SLP-led small grp on ph. aw. (25 min/wk)</td>
<td>Collab &gt; control -trained &amp; untrained ph. aw. Tasks (including more challenging tasks)</td>
</tr>
<tr>
<td>Koutsofas et al., 2009 (S)</td>
<td>Low-Income Preschools 34 low scorers on a ph. aw. measure in Jan.</td>
<td>Tier 2 – 2x/wk, 6 wks, 20-25 min ea., teacher or SLP, small grp in classroom; scripted instruction targeting initial sound awareness</td>
<td>Single subject responses to probe tasks – 71% with med-large tx effects</td>
</tr>
<tr>
<td>van Kleek et al., 1998 (S)</td>
<td>School for children with comm. dis. 2 grps of 8 (3-4; 5-6 y.o.); Ph. aw. activities 12 wks in ea of 2 terms; rhyme, then phoneme aw.; centres to which children rotated (10-15 min)</td>
<td>Ph. aw. activities 12 wks in ea of 2 terms; rhyme, then phoneme aw.; centres to which children rotated (10-15 min)</td>
<td>Exptl &gt; Control on measures of rhyme &amp; phonemic aw.</td>
</tr>
<tr>
<td>CBL/School Age</td>
<td>Ratings: (C) – compelling; (S+) – highly suggestive; (S) – suggestive; (S-) – somewhat suggestive; (St) – sufficient to stimulate further research; CBL – Curriculum-Based Language; MAGIC – Maximizing Academic Growth by Improving Communication; SSD – speech sound disorder</td>
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<tr>
<td>Bland &amp; Prelock, 1996 (S)</td>
<td>Gr.1-4 classrooms Collab. 7 DLD Pull out 7 DLD</td>
<td>Collaboration – interdisciplinary training (7@2hrs), planning (30min/wk) to establish common curric. &amp; comm. goals, team teaching (SLP-educator) 30-45min/wk Pull out – 1-2x/wk, total 30-45min, incorporated academic vocab</td>
<td>Measured Fall/Spring for 3 yrs! No grp diff in # diff words &amp; utterance length Collab &gt; pullout # of inteLDgible utterances &amp; complete utterances</td>
</tr>
<tr>
<td>Starling et al., 2012 (S+)</td>
<td>Sec. school teachers/DLD 7/21 collab. training 6/22 wait condition Schools randomly chosen</td>
<td>Collaboration – 10 wkl 50 min mtgs with SLP targeting modifying language of instruction (oral &amp; written) Wait – did not receive until after study</td>
<td>Trained &gt; untrained teachers use of modifications DLD students of trained &gt; untrained teachers better written exp &amp; listening comp (WIAT-III); no diff on oral exp &amp; reading comp</td>
</tr>
<tr>
<td>Kaufman et al., 1994 (S-)</td>
<td>Typical, 3rd grade 1 Exptl class (n=16) 1 Business-as-usual control (n=16)</td>
<td>Exptl’ – LIC program + comm. skills unit by SLP &amp; teacher, 1/wk for 3 wks, 45 min ea.; focused on adequacy of explanations to peers/adults</td>
<td>Exptl’ &gt; Control at identifying poorer quality explanations, &amp; provided better justifications</td>
</tr>
<tr>
<td>Drew, 1998 (S-)</td>
<td>Summer school, 32 poor readers, 6-10 yrs Small groups</td>
<td>‘Everyone Can Read’ designed &amp; implemented by SLP: phonics-based, sight words, repetition, pleasure of reading (11-12 hrs total)</td>
<td>22 improved reading age by &gt; 6 mos; 4 - no benefit; older children benefited more</td>
</tr>
<tr>
<td>Farber &amp; Klein, 1999 (S)</td>
<td>6 schools, K &amp; gr. 1 12 Exptl classes (n=319) 12 Control classes (n=253)</td>
<td>Exptl’ – MAGIC; SLP &amp; teacher, 2.25 hrs/wk; wkly 1 hr planning mtgs; goals: improve literacy, incr. oral language, impr. communication</td>
<td>Exptl’ &gt; Control on listening comp. &amp; writing; reading approached sig No diff in speaking</td>
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<tr>
<td>Wilcox et al., 2011 (S+)</td>
<td>S&amp;L needs; 3-5 y.o. Random assgn; unbalanced 19 Exptl classes (n=80) 10 Business as usual (n=8)</td>
<td>Exptl’ – Teaching Early Literacy &amp; Language; code-focused (ph. aw., alphabet, print concepts, writing) &amp; oral lang (vocab, sent. length &amp; complex.); 12 biwkly themes, all day/yr; training – 22h, 30 min. wkly in-class mentor (SLP) support</td>
<td>Exptl’ &gt; Control on vocab., sentence length, ph. aw.; language-rich classrooms No diff. on sentence complexity, print concepts</td>
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<td>Justice et al., 2010, 2009 (S+)</td>
<td>3-5 yrs, typical 11 Exptl classes (n=66) 9 Business-as-usual (n=72)</td>
<td>Exptl’ – Read It Again!, 30 wk curriculum, 2x/wk for 20-30 min; 1.5 days training – teachers, SLP, assistants; whole class focus on narrative, vocab, print aw., phon. aw.</td>
<td>Exptl’ &gt; Control on language (grammar; vocab) &amp; emergent literacy (print &amp; phon. aw) No diff on alphabet (business as usual)</td>
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<td>Girolametto et al., 2012 (C)</td>
<td>Random assgn of 20 educators: 10 trained, 10 control; ea. recruit 3-4 kid</td>
<td>Exptl’ – Prof. dev: ABC &amp; Beyond Hanen program (4 workshops with SLP; 3 classroom visits; video fdbk)</td>
<td>Trained &gt; untrained in making print references, using, &amp; child using, decontextualized language</td>
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<td>Nelson &amp; Meter, 2006 (St)</td>
<td>Gr. 1-5 Individual cases</td>
<td>3x/wk, 45-60 min, jointly planned &amp; implemented by SLP &amp; educator, target curriculum-based writing</td>
<td>Patient-based evidence documents growth in all targets</td>
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<td>Benfriel, 2000 (Unpublished) (S)</td>
<td>Gr. 1-2 Collab. – 4 DLD, 5 artic. Pull out – 4 DLD, 5 artic.</td>
<td>Collaboration – 1 teach/1 drift; 30 min/wk; SLP targeted comm. goals using curric. taught by teacher; SLP-teacher met wkly Pull out – 2x/wk, 20 min ea.; incorporate curr. materials</td>
<td>Collab = pull out for language-related, but collab &lt; pull out for speech-related SLP behaviours; Collab = pull out for DLD but collab &lt; pull out for artic. kid productions</td>
</tr>
<tr>
<td>McLeod et al., 2017</td>
<td>4-5 yrs, SSD; randomly assigned Exptl’ (n=65) or business-as-usual (n=58)</td>
<td>Computer-assisted intervention using preset teacher controls for individualized targets; SLP did 1st session then monitored; educator did other sessions; 1-2x/wk for 9 wks</td>
<td>No group differences</td>
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</tbody>
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