Slide 1

Connecting Spoken and Written Language for School-Age Children

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1st PASP National Convention
Plenary Session
July 23, 2016 @ 9:30am

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Slide 2

- ROW-Lab:
  - http://blogs.shu.edu/row-lab/
    - http://blogs.shu.edu/row-lab/handouts
- Facebook
  - www.facebook.com/ROWlab/
- Twitter
  - @thespeechguy
- Research Gate
  - https://www.researchgate.net/profile/Anthony_Koutsoftas

SCHOOL OF HEALTH AND MEDICAL SCIENCES
Speech-Language Pathology
SETON HALL UNIVERSITY

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Slide 3

Abstract

- Reading and writing are important considerations for speech-language pathologists especially when working with school-age children because of the interplay between spoken and written language modalities. Research has indicated that children who are habilitated from spoken language deficits may continue to demonstrate language difficulties in the written modalities (Scott & Windsor, 2000). The purpose of this plenary session is to help SLPs better understand relationships among reading and writing in school-age children with histories of speech-language delays and disorders. Data from school age children with typical and disordered language will be used to illustrate the connections and interplay between spoken and written language. At the end of this session participants will be able to describe an integrated model of language that includes spoken (listening, speaking) and written (reading, writing) modalities for school-age children; and, will further their understanding of why written language modalities must be considered as part of speech and language interventions.

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Slide 4

Learner Outcomes

1) To understand and describe the relationships among four modalities of language: listening, speaking, reading, and writing, and how to consider integrating goals across modalities.

2) To broaden understanding of the role of speech and language pathologists with respect to reading and writing intervention for children with communication disorders.

3) To explain currently well-accepted theories of reading and writing and how to consider these as part of speech and language interventions.

4) To learn results of 2 studies examining multimodal views of language.
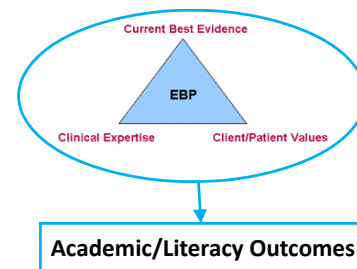
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Slide 5

Agenda

- Theoretical Framework for an Integrated Model of Language
  - Listening, Speaking, Reading, Writing
  - Phonology, Morphology, Semantics, Syntax, Discourse
  - ASHA Position Statement

- Current Models of Reading and Writing
  - The simple view of reading
  - The simple view of writing

- *Data-based presentation:*
  Reading and Writing in Intermediate Grade Children with and without Language Learning Disabilities
  1) Reading and writing in 6th grade children with typical development
  2) Differences in reading and writing in children with and without language learning disabilities

- Guiding Principles of Intervention - Adapted for PASP

- Questions and Answers

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Slide 6

Evidence-Based Practice in SLP

Current Best Evidence

EBP

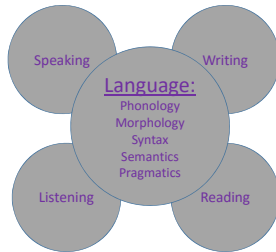Clinical Expertise   Client/Patient Values

Academic/Literacy Outcomes

ASHA, 2008

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An integrated model of language across modalities
(Abbott et al. 2010; Berninger, 2000; Berninger & Abbott, 2010)

Speaking Writing

Language:
Phonology
Morphology
Syntax
Semantics
Pragmatics

Listening Reading

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Integrate Treatment Goals
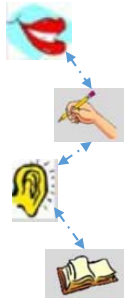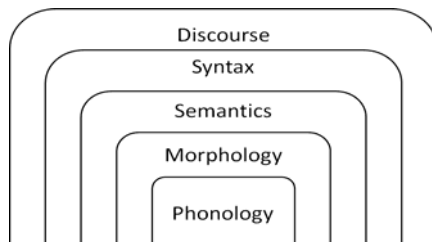
- Since language is both oral and written…it is important to target language skills across more than one modality.

• Oral Language	• Written Language
• Speaking	• Reading
• Listening	• Writing

- Say it, Write it
- Write it, Say it
- Use a white board
- Pen/Paper

- Hear it, Read it
- Read it, Hear it
- Include a book as part of treatment

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Five Domains of Language (Cake Model); Receptive and Expressive Considerations

Discourse
Syntax
Semantics
Morphology
Phonology

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Reading, Writing, and Speech-Language Pathology

ASHA Position Statement
(ASHA, 2001; 2002)

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According to ASHA (2001)

- "…speech-language pathologists play a critical and direct role in the development of literacy for children and adolescents with communication disorders, including those with severe or multiple disabilities."

Why?

…spoken language provides the foundation for reading and writing;

…language modalities have reciprocal relationships;

…language impairments are often cross-modal;

…oral language development supports written language development;

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ASHA & Literacy

- Roles and Responsibilities of Speech-Language Pathologists with Respect to Reading and Writing in Children and Adolescents

- Position Statement: http://www.asha.org/policy/ps2001-00104.htm

- Technical Report*: http://www.asha.org/policy/tr2001-00148.htm

- Guidelines: http://www.asha.org/policy/gl2001-00062.htm

- Knowledge and Skills: http://www.asha.org/policy/ks2002-00082.htm

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Purpose

- "This outline is intended to inform the activities of both university and continuing education program planners, as well as individual practitioners who are continue to develop skills."

- "These knowledge and skills are necessary to meet the needs of children and adolescents with impaired communication systems in **written** as well as spoken language domains, and *to understand the ramifications of not doing so*."

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Assumptions

- Practitioners have general background knowledge that need not be reiterated in this document.

- Boundaries between knowledge and skill are not always clear...*meaning I know about something but may not be able to do something about it.*

- No one discipline "owns" literacy skills and that teaching them is a collaborative effort.

- The knowledge acquired for reading remediation may be from multiple learning environments including undergraduate, graduate, and continuing education.

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Roles and Responsibilities

- Prevention
- Identification
- Assessment
- Intervention
- Other Roles

- The nature of literacy
- Normal development
- Disorders of language and literacy
- Clinical tools and methods
- Collaboration, leadership, and research principles

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Reading 101

The big FIVE of reading:
(NICHD, 2000)

- Phonemic Awareness
- Phonics
- Fluency
- Vocabulary
- Text Comprehension

The Simple View of Reading
(Hoover & Gough, 1990)

- Reading Comprehension (RC) is the product of Decoding (D) and Linguistic Comprehension (LC).

- RC = D x LC
  - What happens if either D or LC is equal to zero?

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Simple View of Reading +
The Big Five of Reading

$$RC = D \times LC$$

| - Phonemic Awareness
- Phonics
- Fluency | - Vocabulary
- Text Comprehension |

RC = Reading Comprehension
D = Decoding
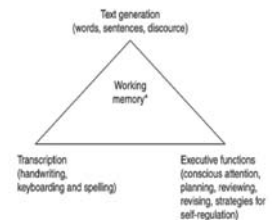LC = Linguistic Comprehension

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Writing 101

The Writing Process
(Hayes & Berninger, 2014)

- Proposer
- Translator
- Transcriber
- Evaluator

Repeated as Needed

- Task Environment
- Cognitive-Linguistic Resources

The Simple View of Writing
(Berninger & Amtmann, 2003)

Text generation (words, sentences, discourse)

Working memory*

Transcription (handwriting, keyboarding and spelling)

Executive functions (conscious attention, planning, reviewing, revising, strategies for self-regulation)

Process vs. Product

For school-age children:

- Processes take time to developing individually before coordination together for writing purposes

- Writing products range in purpose, task, genre and are predominantly school based activities

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Reading and Writing in Children with and without Language-Based Learning Disabilities

A Mini-Meta Analysis

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Language-Based Learning Disabilities (LLD)

- According to ASHA (2015) language-based learning disabilities are problems with age expected reading, spelling, and/or writing, and can be preceded or concurrent with oral language deficits.

- Research has demonstrated that children with LLD who no longer present with spoken language deficits continue to show deficits in written language samples (Scott & Windsor, 2000).
  - Reading and writing are needed for successful completion of compulsory education and to obtain gainful employment with or without a higher education degree.

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Language is Multimodal

$$RC = D \times LC$$

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Language Learning in School Age Children

- School-age children are expect to read and write for learning, academic, social purposes, and eventually for later in life success (Nippold, 2007)

- Spoken and written language tasks vary by environment, purpose, and child level variables (background knowledge, motivation; Snow et al. 2007)

- Reading has received far more attention in the research literature than writing; however, the connections between oral language assessment and intervention with reading and writing are only just emerging
  - Standardized assessments of reading are widely available, valid, and reliable

- Language sampling procedures for spoken and written language samples provide an evidence-based was to assess, diagnose, and monitor progress toward treatment goals
  - Standardized assessments of writing are not widely available

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Levels of Language

- Language sampling allows for a standardized way to measure spoken and written language
  - (e.g., Abbott, Berninger, & Fayol, 2010; Berninger, Abbott, Swanson et al. 2010)

- Word, Sentence, Text level measures
  - (e.g., Discourse Cake)

- Reading can be assessed at multiple levels
  - Listening Comprehension;
  - Vocabulary;
  - Sentence and Paragraph Comprehension

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Purpose

- To provide evidence supporting a multimodal model of language in children with typical development and age/grade level peers with language-based learning disabilities.

- To demonstrate how to use standardized assessments of reading with language sampling procedures for written language samples for assessment and treatment purposes.
  - Diagnostic, progress monitoring

- To provide research with regarding to connecting oral and written language for language learning purposes in school age children.
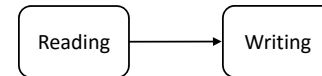
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Study 1

- Reading and writing in 6th grade children with typical development

  - Research question:
    - Do measures of reading ability account for significant amounts of variance in the quality of writing in typically developing sixth grade children?

Reading → Writing

(Koutsoftas & Gray, 2013)

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Method

Study 1

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Participants

- 201 typically developing sixth grade children

- Age in years = 11.60 (SD = .56)

- Females = 110
- Males = 91

- Mother's years of education = 14.18 (SD = 1.90)

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Procedures

- 4 session research protocol
- Administered to classrooms or groups of children

  - Session 1 – Group Reading and Diagnostic Evaluation (GRADE; Williams, 2001)

  - Session 2 through 4 – Three-day writing process protocol

    - Day 1 – Planning Outlines
    - Day 2 – First Drafts
    - Day 3 – Final copies

    > Narrative Story Generation Prompt:
    > *"One day you are on your way to school and your backpack turns into a pair of wings, tell the story of what happens."*

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G.R.A.D.E. (Williams, 2001)

- Group administered standardized test of reading ability
- Norm-referenced by grade level
- Acceptable psychometrics

- 4 subtests
  - Listening Comprehension
  - Vocabulary
  - Sentence Completion
  - Paragraph Comprehension

Stanine (standard nine)
Mean = 5; Standard Deviation = 2
Normal range = 3 to 7

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Writing Samples - Final Copies

- Quality Rating Score
  - Six traits writing rubric (STWR; Education Northwest, 2006)
  - Possible range = 6 to 36

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Results – Study 1

- Stepwise multiple regression

- Independent Variable = Six Traits Writing Rubric Total Score

- Dependent Variables (Predictors) = GRADE subtests
  - Listening comprehension
  - Vocabulary
  - Sentence completion
  - Paragraph comprehension

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Significant 3-step model
$F(3,196) = 24.91$, $p < .01$, adjusted $r^2 = .27$

Variance accounted for by Subtest:
- Vocabulary = 22%
- Passage Comprehension = 4%
- Sentence Completion = 2%

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Discussion – Study 1

- Reading ability accounted for significant amounts of variance in writing quality with vocabulary accounting for the most variance

- Vocabulary though assessed through reading, is also language comprehension
  - RC = D x LC

- Improving vocabulary will help improve reading ability; and also improve language ability
  - Vocabulary as a proxy for language

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Study 2

- Differences in reading and writing in children with and without language learning disabilities

  - Research questions:
    1) Do children with LLD differ from peers with TD on measures of reading, and at what levels?
    2) Do children with LLD differ from peers with TD on measures of writing, and at what levels?
    3) What are the relationships among reading are writing variables with writing quality, across the sample?

(Koutsoftas, in press)

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Method
Study 2

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Participants

- 64 intermediate grade children
  - Matched pairs design

	TD (n = 32)	LLD (n = 32)
Age in years	10.88 (SD = 1.18)	10.94 (SD = 1.22)
Mother's years of education	14.63 (SD = 1.64)	14.19 (SD = 2.68)
Female : Male	14 : 18	14 : 18

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Procedures – (same as study 1)

- 4 session research protocol
- Administered to classrooms or groups of children

  - Session 1 – Group Reading and Diagnostic Evaluation (GRADE; Williams, 2001)

  - Session 2 through 4 – Three-day writing process protocol

  - Day 1 – Planning Outlines
  - Day 2 – First Drafts
  - Day 3 – Final copies

  > **Narrative Story Generation Prompt:**
  > *"One day you are on your way to school and your backpack turns into a pair of wings, tell the story of what happens."*

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GRADE (Williams, 2001)

- Group administered standardized test of reading comprehension
- Norm-referenced by grade level
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- 4 subtests
  - Listening Comprehension
  - Vocabulary
  - Sentence Completion
  - Paragraph Comprehension

  Stanines (standard nine)
  Mean = 5; Standard Deviation = 2
  Normal range = 3 to 7

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Writing Samples - Final Copies

- Language Transcription Measures
  - Total number of words
  - Clauses per sentence
  - Spelling accuracy

- Quality Rating Score
  - Six-point rating, adapted from 2 prior studies
    (Dockrell et al. 2014; Nelson & van Meter, 2007)
    - Accounts for narrative story structure
  - Range = 0 to 5

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Results

Study 2

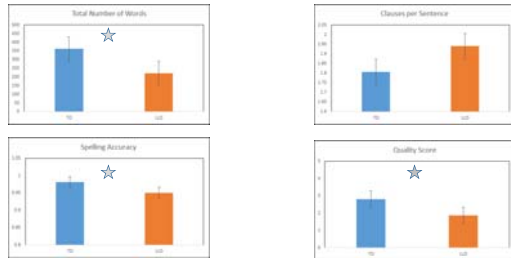41

RQ1 – Between group differences in reading

- MANOVA; Wilks' Λ = .55, $F_{(4,59)}$ = 11.86, $p < .01$; partial η^2 = .45

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RQ2 – Between group differences in writing

- MANOVA; Wilks' Λ = .68, $F(4,59)$ = 7.04, p < .01; partial η^2 = .32

RQ3 – Relationships with writing quality

- Pearson correlations

Reading				Writing		
Listening Comprehension	Vocabulary	Sentence Completion	Passage Comprehension	Total number of words	Clauses per sentence	Spelling Accuracy
-.12	.20	.21	.23	.64**	-.01	.41**

** p < .001

Discussion – Study 2

- Language status clearly impacted reading and writing at multiple levels of language:
  - For reading, this was observed at the word, sentence, and discourse levels
  - For writing, this was observed at the word and discourse levels only

- Relationships among measures of reading and writing towards writing quality were few, and only between writing at the word and discourse levels with writing quality.
  - Writing at the word and discourse levels was related to better quality narrative stories.

Overall Implications

- Language modalities of reading and writing showed strong relationships between each other and differences by language group status (LLD, TD) support the influence that oral language has on these skills.

- SLPs working with children who demonstrate oral language deficits should very much consider the implications this has on written language deficits (reading and writing).

Guiding Principles of Intervention

PASP Focus:

Small SLP workforce, high need populations;
Lack of presence in school settings;

Family involvement in treatment

Guiding Principles of Intervention
(Paul & Norbury, 2012)

1) Target goals that are curriculum based

2) Integrate oral and written language

3) Go meta

4) Provide preventative intervention

1) Target goals that are curriculum based

• i.e., - keep it functional

- What oral language skills do children need to meet curricular/academic expectations?
- Use school curriculum to identify language needs, and identify deficits children on caseloads have with meeting these skills.

- *PASP* – increase presence in academic/school environments; include families as part of this initiative

2) Integrate oral and written language

• Provide both oral and written language opportunities for students to practice the forms and functions targeted in intervention

- Literacy socialization contexts – purposes for reading and writing
- Metalinguistics – thinking about talking, reading, writing
- Phonological awareness
- Narratives – tell them, read them, write them

3) Go meta

• Focus on activities that direct conscious attention to the language and cognitive skills a student uses in the curriculum

- Talking about talking
- Thinking about thinking
  - Comprehension monitoring

• *PASP* – teach families how to do this as part of everyday conversations

4) Provide preventative intervention

- During the preschool years…
  - Watch emerging literacy carefully
  - Provide literacy related activities alongside speech and language goals

- During elementary to middle school years…
  - Provide children rich language learning environments

- *PASP* - Work with Teachers and Parents…
  - Develop screening instruments and referral checklists for parents/teachers
  - Work with teachers to provide language rich learning environments
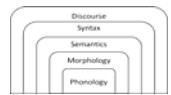
Questions???

Thank you ☺

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