Today’s Presentation

• Overview of reading development
• Overview of research on teaching students with ID to read
• Using assessment for data-based instruction
• Research-based tips for literacy instruction for students with ID and resources “to go”
Overview of Reading Development

National Reading Panel (2000)
Scientifically Based Reading Research

- http://www.nationalreadingpanel.org/
- *Explicit and systematic*
- Phonemic awareness instruction
  - Understanding that spoken language is made up of sounds
- Sound-symbol correspondence (phonics)
  - Understanding of how to use written letters and syllable patterns to read and write words
- Promote fluency
  - Reading automatically
- Teach vocabulary with attention to “word study” or relationships among words
  - Oral vocabulary and reading vocabulary
- Model and provide guided and independent practice for reading comprehension strategies
- Encourage writing and reflection
Model of Reading development (Model also applies to Spelling)
Ehri & McGormick

**Pre-alphabetic Phase**
- Visual cue word recognition
- 7-up
- Pre-K - Grade 1, severely disabled

**Partial Alphabetic**
- Learning PA and letter-sound correspondence
- May read "can" for "cat"

**Full Alphabetic**
- Mastering PA
- Increased orthographic knowledge
- Around Grade 2

**Consolidated Alphabetic**
- Automatic word recognition
- Decodes sight words
- Building fluent decoding

**Pre-alphabetic Phase**
- Visual cue word recognition
- Pre-K - Grade 1, severely disabled

**Delayed readers**
- Can decode, but struggle with comprehension

**Non-automatic readers**
- Can decode, but laboriously
- Lack fluency and automaticity

**Compensatory Readers**
- Lack decoding ability
- Over-use sight word and meaning cues

**Non-alphabetic readers**
- No PA, poor letter-sound association
- Over-use pictures and context cues

**Highly proficient reading (like you and I)**
- Can decode and comprehend a variety of texts
- Increased higher-order comprehension ability

**Automatic and strategic reading**
- Advanced level of PA
- Decodes with fluency
- Learning some basic comprehension strategies

**Consolidated Alphabetic**
- Automatic word recognition
- Decodes sight words
- Building fluent decoding

**Partial Alphabetic**
- Learning PA and letter-sound correspondence
- May read "can" for "cat"

**Full Alphabetic**
- Mastering PA
- Increased orthographic knowledge

**Consolidated Alphabetic**
- Automatic word recognition
- Decodes sight words
- Building fluent decoding

**Delayed readers**
- Can decode, but struggle with comprehension

**Non-automatic readers**
- Can decode, but laboriously
- Lack fluency and automaticity

**Compensatory Readers**
- Lack decoding ability
- Over-use sight word and meaning cues

**Non-alphabetic readers**
- No PA, poor letter-sound association
- Over-use pictures and context cues

---

**Stages of Reading Development**

- **Learning to Read**
  - Phonemic decoding
  - Increase automatic recognition of words
  - Fluency

- **Reading to Learn**
  - Expand to more sophisticated comprehension
  - Expand vocabulary
  - Continue to use skills from other stages

**Pre-Reading**
- Language development
- Print awareness
- Phonological awareness
What is Phonological Awareness?

- Phonological awareness is an *auditory or listening awareness that what we say is made up of bits of sound*. Phonological deficits are the core of dyslexia and reading disabilities.
  - It is not phonics, which is the study and use of how these units of sound are spelled using letters and to syllables.
    - For example, “students” is made up of one word.
    - How many morphemes in students?
    - How many syllables are in students?
    - How many phonemes in students?
  - It requires an *attention* to the sounds in words, rather than their meaning (e.g. sounds in dog are /d/ /o/ /g/; not “woof-woof”).

Five Levels of Phonological Awareness

- Initial Sound Identification
- Syllable Blending & Segmenting
- Onset-Rime Blending & Segmenting
- Phoneme Blending & Segmenting
- Phonemic Awareness
Phonics

• Phonics is the understanding that there is a predictable and systematic relationship between phonemes and the letters that represent the sounds in written language.

Levels of Phonics Skills

Alphabetic Awareness

Recognize letters

“Read” symbols like 7-up or own name

Blend simple CVC words like mat

Read simple high frequency words

Fluent Reading

Read simple sentences and stories

Read chunks of words

Recognize more high frequency words by sight

Decode more difficult phonics patterns

CVCE; CVCC

Decode multi-syllable words

Read with expression
Meaning-focused Instruction

- Vocabulary and Comprehension through Book Reading

Levels of Oral and Reading Vocabulary Development

- No idea what the word means
- Has heard or seen the word
- Know something about it, relate it to something familiar
- Know the word well, can use it
- Decode words efficiently and fluently
- Understand the meaning
Reading is a multifaceted skill, gradually acquired over years of instruction and practice.

Think Pair, Share (KWL)

- So far, what is familiar with what you KNEW?
- WHAT is new or tips for your family members or colleagues?
- What would you be interested in LEARNING more about?
Literature Review: Research on Reading and ID

- Students with intellectual disability (ID) demonstrate lower levels of reading achievement than students with other disabilities (Caffrey & Fuchs, 2007; Wei, Blackorby, & Schiller, 2011).

- In the past, most research was on isolated phonics skills; emphasis on sight word instruction (reviews by Browder, et al., 2006; Browder & Xin, 1998; Joseph & Seery, 2004)

- More recently research has expanded to examine the effects of more comprehensive reading programs for improving reading for students with ID broadly, and for students with Down Syndrome, specifically (Lemons et al., 2013)
A w-score of 500 is the average score for a 10 year old.
Literature Review: Recent research on comprehensive programs

- More recently research has shown students with ID respond favorably to more comprehensive programs of reading instruction (e.g., Allor, et al., 2014; Browder, Mims, Spooner, Ahlgrim-Delzéll, & Lee 2008; Connor, Alberto, Compton, & O’Connor, 2014; Lemons, et al., 2015).
  - Project Maximize Summary (Allor) Early Interventions in Reading
  - Project ERIC (Lemons) Road to the Code; Road to Reading

Allor, et al. (2014): Overview of Study

- RQ: Determine if a comprehensive, phonics-based, direct instruction reading program would be effective in teaching early reading and language skills to students with IQs ranging from 40-79
- Longitudinal (up to 4 years); RCT
- Students in Grades 1-4 when they began the study
- Daily small group instruction (45 min) using Early Interventions in Reading (Allor & Mathes; Mathes & Torgesen – SRA McGraw-Hill)
Allor, et al. (2014): Intervention

- Early Interventions in Reading (EIR)
  - Explicit, systematic and comprehensive
  - Level K, Level 1, Level 2
  - published by SRA/McGraw-Hill
- Supplemental language instruction
- Supplemental home-school connection materials to increase intensity

Allor, et al. (2014): Findings

- Students who received intervention outperformed students in contrast group on all language and literacy measures (except listening comprehension and sight words)

- Support for use of scientifically-based reading instruction for students with low IQs (IQ 40-80, including ID range)
  - IF Individualized and with high degrees of fidelity
  - IF provided intensive, comprehensive instruction over an extended period of time

- But, even with intervention, it can take 4 years for students with moderate intellectual disabilities to master first grade reading skills
What research shows could be...
(low IQ including students with ID, Allor, 2014)

Oral Reading Fluency (First Grade DIBELS)
Predicted Scores by IQ and Condition

Week of Instruction (up to 130 weeks -- 4 academic years)

Developing Sam and Friends Curriculum:
Addressing Specific Needs

• **Intensive Repetition**
  – multiple texts and materials
  – some materials designed for use by paraprofessionals/tutors
  – within texts, extensive repetition of high utility words (sight words and high frequency decodable words)

• **Low Language**
  – texts with familiar, high utility vocabulary
  – familiar topics
  – picture support as needed (pictures of non-decodable words, e.g. ball)
  – short sentences, gradually increasing in length
  – sentences similar to spoken language (i.e. more natural)
Developing Sam and Friends Curriculum: Capitalizing on Relative Strengths

• **Sight Words**
  – faster introduction of sight words
  – early text focused on sight words, while developing phonics skills (particularly blending)

• **Letter-Sound Correspondence**
  – faster introduction of consonant letter-sounds

---

**Key Characteristics of Sam and Friends Curriculum**

### Books

- Gradually introduce small sets of words (unit words)
- Varied sentence structure (to minimize guessing)

### Lessons

- Explicit practice of phonemic awareness, sight word, and decoding skills
- Engaging activities that support complete processing of letters within words and words within sentences

---

**Supports Word Recognition**

- Helper text
- “Natural” syntax
- Picture support for key content words

**Supports Comprehension**

- Shared reading experience
- Dialogic reading questions
- Graphic organizers
- Word building activities in context

**Provides Intensive Practice**

- Cumulative review
- Repetition of unit words
- Multiple books in each unit

- Cumulative review
- Multiple activities for each unit
- Teacher sessions 3-4 times/week, tutor sessions 2-3 times/week (20 minutes each)
Sample Pages from Level 1 Book

New Look and Say Words
- do
- I
- like
- not
- want

Picture Words
- cheese
- chips
- cookies
- ham
- pickle
- sandwich

"It's time for lunch," said Mom. "I want a sandwich. Sam, what do you want to eat?"

Child reads text in conversation bubbles

Sample Pages from Level 7 Book

New Look and Say Words
- because
- care
- come
- could
- feel
- first
- how
- if
- it
- just
- lay
- my
- not
- now
- of
- next
- said
- should
- take
- take
- think
- took
- why
- would

"I want a sandwich."

"This is a nice lunch. For dessert we can eat some cookies, cake, or ice cream. What do you like best?"

Teacher or tutor reads “helper text” in gray boxes and child reads text

Teacher or tutor reads “helper text” (gray box)
Video

JG

- Age 10
- Down Syndrome
- IQ 56
- PPVT 48 SS, 3.2 AE

Scores WJ III (pre/post raw scores)
- Letter ID 16/16
- Word ID 3/3
- Blending 3/1
- First Sound 3/3

Target Words (sight words)
WB

- Age 13
- Down Syndrome
- IQ 40
- PPVT 73 SS, 4.7 AE

Scores WJ III (pre/post raw scores)
- Letter ID 12/15
- Word ID 0/2
- Blending 5/7
- First Sound 0/3

Target Words (sight words)

Note: never reached mastery on Level 1
Data-based Instructional (DBI) Approach

- See Lemons et al. 2014 for example in reading.
- Additional resources on [www.intensiveintervention.org](http://www.intensiveintervention.org)
- Approach is aligned with the idea that special educators are expert, clinical teachers.

Why DBI?

- Some students do not respond to research-based interventions.
- These students require more intensive, individualized instruction.
- DBI provides a framework to individualize instruction.
- *When teachers use DBI correctly, student achievement can improve.*
Progress Monitoring

• Example Measures
  – Dynamic Indicators of Basic Early Literacy Skills
  – EasyCBM
  – AimsWeb
• IRIS Resource for learning more about CBM:
• National Center on Intensive Interventions
  – http://www.intensiveintervention.org/
• The ABCs of CBM (Hosp et al., 2007)

Modified from Hosp, Host, Howell & Allison (2014).

<table>
<thead>
<tr>
<th>Fact: What is the student’s performance</th>
<th>Assumed Cause: what is the skill or motivation that may cause the problem</th>
<th>Test: How to access the skill and the can’t do vs. won’t do</th>
<th>Results: When I teach the skill, does the student master it?</th>
<th>Next Step: What is next? Generalization from lists to stories, etc. What is the specific next goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>The student reads only 20 wpm</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The student does not know long vowel spellings</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The student does not like to read Bob books</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The student does like to compete against self</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
A Caveat about Assessment
Alternate Assessment Formats for Progress Monitoring Students with ID
(Jones et al., in press)

• The primary purpose of this study was to explore accommodations related to measurement administration format.
• We compared our paper and pencil format to the same stimuli presented on flashcards or on PowerPoint slide presentation formats.

What We Observed: AKA “Dependent Variables”

• Items attempted
• The number of prompts or redirections
• The percentage correct (number correct/number attempted)
Participants

<table>
<thead>
<tr>
<th>Students</th>
<th>Gender</th>
<th>Ethnicity</th>
<th>Age</th>
<th>Diagnoses</th>
<th>IQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>JG*</td>
<td>Male</td>
<td>Caucasian</td>
<td>9</td>
<td>Down syndrome</td>
<td>47</td>
</tr>
<tr>
<td>Stephen*</td>
<td>Male</td>
<td>Caucasian</td>
<td>11</td>
<td>Down syndrome</td>
<td>53</td>
</tr>
<tr>
<td>Susie*</td>
<td>Female</td>
<td>Hispanic</td>
<td>11</td>
<td>Down syndrome</td>
<td>46</td>
</tr>
<tr>
<td>Elliot**</td>
<td>Male</td>
<td>Hispanic</td>
<td>8</td>
<td>Autism</td>
<td>71</td>
</tr>
<tr>
<td>Greg**</td>
<td>Male</td>
<td>Caucasian</td>
<td>8</td>
<td>Autism</td>
<td>78</td>
</tr>
<tr>
<td>Milton**</td>
<td>Male</td>
<td>Caucasian</td>
<td>5</td>
<td>Autism</td>
<td>70</td>
</tr>
</tbody>
</table>

Results

- No single format was predictive of improved performance
- Different students did better under different conditions
- Some students performed more reliably under certain accommodations even if it was not more accurate
Take Home

- CBM is critical for progress monitoring
- Accommodating CBM is an important consideration
- BUT there is no “one size fits all” accommodation that works for every student

Summary of Assessment Recommendations and Possible Accommodations

- Examiner judgment is key
- Expect variability, so test frequently
- Keep assessment sessions as short as possible
- Consider extra time or conducting a timed-test as an untimed test
- Model test behaviors, especially for phonemic awareness
- Select/create progress monitoring measures that align with the content and procedures of the curriculum
- Consider alternate formats
- Consider tangible reinforcers
- Consider providing more feedback about performance
KWL- What did you KNOW, What did you LEARN?, and What do you want to LEARN more about?

- CBM
- DBI
- Data
- Assessment accommodations
- IEP Goals that are clear and measurable

Tips To-Go

10 Research-Based Tips for Enhancing Literacy Instruction for Students with ID
(Lemons, Allor, Al Otaiba, and Lejeune, 2016, TEC)

1. Keep big picture goals in mind.
2. Ensure you have a clear picture of the student’s current level of functioning and set meaningful, measurable goals.
3. Provide explicit, systematic reading instruction.
4. Provide instruction with sufficient intensity to accomplish goals.
5. Seek out professional development opportunities to deepen understanding of the complex process of learning to read.
6. Remember that language abilities are the underlying foundation for reading skills.
7. Scaffold working memory with images, objects, letters, and words.
8. Target specific parts of a scope-and-sequence to focus instruction.
9. Use data to guide instruction and adaptation.
10. Involve service providers and family members.

Tip #2 Ensure you have a clear picture of the student’s current level of functioning and set meaningful, measurable goals.

- phonemic awareness and decoding/encoding skills
- sight word skills
- fluency
- listening and/or reading comprehension skills
- behavioral or learning challenges
Tip #8 Target specific parts of a scope and sequence to focus instruction

- phonemic awareness and decoding/encoding skills
  - e.g. specific letter sound correspondences (a, t, m, s, f), decoding and spelling words made up of those sounds (sat, fat)
- sight word skills
  - small set of targeted sight word
  - cumulative review
- listening and/or reading comprehension skills
  - Sorting words related to stories based on meaning

Focus on Key Skills: Phonemic Awareness

Applying Research

- Focus on Blending and Segmenting
  - Blending -- teacher says sounds one at a time and child says word
  - Segmenting -- teacher says word and child says sounds one at a time
  - TIP: Stretch and Connect

- Link PA and Letter-sound knowledge to Decoding and Encoding
  - When teaching letter-sounds, stretch continuous sounds
  - When teaching PA Blending, model stretch and connect
  - Model and teach explicit transfer of these skills when sounding out words and spelling

✔ Important
Tip #9 Use data to guide instruction

- phonemic awareness and decoding/encoding skills
  - e.g., specific letter sound correspondences (a, t, m, s, f), decoding and spelling words made up of those sounds (sat, fat)
- sight word skills
  - small set of targeted sight word
  - cumulative review
- listening and/or reading comprehension skills
  - Sorting words related to stories based on meaning

Progress Monitoring

- Example Measures
  - Dynamic Indicators of Basic Early Literacy Skills
  - EasyCBM
  - AimsWeb
- IRIS Resource for learning more about CBM:
- National Center on Intensive Interventions
  - http://www.intensiveintervention.org/
- The ABCs of CBM (Hosp et al., 2007)
Possible Programs

- **Early Interventions in Reading**
  - Struggling 1st grade readers
  - English Language Learners
  - Low IQ/intellectual disability

- **Early Literacy Skills Builder**
  - Students with ID, including students who are nonverbal (Browder et al., 2012)

- **Road to Reading**
  - Struggling readers
  - Students with Down Syndrome (Lemons et al., 2012)

- **Sam and Friends** (Allor et al., in review)
• For students with ID
  
  – may want to begin with sight word program, but **integrate** letter-sound and phonics instruction into these programs as early as possible.
  
  – Excellent overviews of literacy interventions for students with moderate to severe disabilities are *Teaching Students with Moderate and Severe Disabilities*, Browder & Spooner (2011) and *More Language Arts, Math, and Science…* (2014) [Available on Amazon]

---

**More on Feedback and Support**

- **Time delay prompting** includes the use of a prompt, or cue, after allowing the student a pre-determined amount of time to pronounce a word correctly. (prevents random guessing and practice of incorrect answer)

- **Tangible reinforcers** are desired objects given to the learner following a desired response (i.e., sounding out a word quickly, recognizing a word by sight, improving their rate of reading).
RTI Resources

- Florida Center for Reading Research. The Florida Center for Reading Research (FCRR) serves as part of Florida’s “Leadership Triangle” for the Just Read, Florida! Initiative. It provides technical assistance and support to all districts and schools receiving a Reading First Award. The website offers technical reports and reviews of core reading programs and interventions.
  www.fcrr.org

- What Works Clearinghouse. The What Works Clearinghouse was established by the U.S. Department of Education’s Institute of Education Sciences to provide educators, policymakers, and the public with a central, independent, and trusted source of scientific evidence of what works in education.
  http://w-w-c.org/index.html
RTI Resources (cont’d)

- **Positive Behavioral & Interventions Supports.** The Technical Assistance Center on Positive Behavioral Interventions and Supports is established by the U.S. Department of Education’s Office of Special Education Programs (OSEP) to define, develop, implement, and evaluate a multi-tiered approach to Technical Assistance that improves the capacity of states, districts and schools to establish, scale-up and sustain the PBIS framework. Emphasis is given to the impact of implementing PBIS on the social, emotional and academic outcomes for students with disabilities.
  

RTI Resources (cont’d)

- **Partnership for Reading.** The Partnership for Reading is a collaborative effort by three federal agencies - the National Institute for Literacy (NIFL), the National Institute of Child Health and Human Development (NICHD), and the U.S. Department of Education - to bring the findings of evidence-based reading research to the educational community, families, and others with an interest in helping all people learn to read well. First established in 2000, The Partnership is now authorized by the No Child Left Behind Act of 2001 (P.L. 107-110).
  

- **Intervention Central.** Intervention Central provides teachers, schools and districts with free resources to help struggling learners and implement Response to Intervention and attain the Common Core State Standards.
  
RTI Resources (cont’d)

- *The IRIS Center.* The IRIS Center is a national center dedicated to improving education outcomes for all children, especially those with disabilities birth through age twenty-one, through the use of effective evidence-based practices and interventions.
  
  http://iris.peabody.vanderbilt.edu/

- *U.S. Department of Education.* Questions and Answers On Individualized Education Programs (IEP’s), Evaluations and Reevaluations.
  
  http://idea.ed.gov/explore/view/p/root,dynamic,QaCorner.3.

- *The Texas Center for Learning Disabilities.* TCLD is a grant-funded research center developed to investigate the classification, early intervention, and remediation of learning disabilities (LD).
  
  http://www.texasldcenter.org/

Project IRIS examples DBI Part 1:

- **Intensive Intervention (Part 1): Using Data-Based Individualization to Intensify Instruction** (http://iris.peabody.vanderbilt.edu/module/dbi1/)
DBI Part 2:

- Intensive Intervention (Part 2): Collecting and Analyzing Data
- http://iris.peabody.vanderbilt.edu/module/dbi2/#content

Ask the Experts Webinars on NCII