Wechsler Individual Achievement Test—Second Edition

Process Assessment of the Learner
An Assessment Model for Decision Making

A strong assessment plan

- Produces meaningful and cost-effective information for generating hypotheses or making predictions about interventions that are likely to be helpful in addressing functional goals and concerns. (Macmann & Barnett, 1999)
A strong assessment plan

- Must address the functional concerns of parents, teachers, and children.
- Supports ongoing problem solving and problem structuring in “real world” settings.
- Allows for sequential decision-making to reduce error.
A strong assessment plan

- Must be integrated and transformed into professional inferences and actions within the context of a problem-solving process.

- Must link assessment information and resulting decisions to problem-solving goals. (Reschley & Ysseldyke, 1995)
A 3-Tiered Model

- **First Tier:** Screening for Early Intervention
- **Second Tier:** Assessing Curriculum, Modifying the Regular Program, Progress Monitoring, and Pre-Referral Collaborative Problem Solving
- **Third Tier:** Diagnosis and Treatment Plans
Tier 1: Screening (Reading)

Grade K: Evaluate the subskills of:

- Naming alphabet letters
- Nonword memory
- Rhyming
- Syllable Segmentation
- Rapid Naming (Colors/Objects)

WIAT II
CTOPP
PAL-RW
PAL-RW
NEPSY, CTOPP
**Tier 1: Screening (Reading)**

**Grade 1: Evaluate the subskills of:**

<table>
<thead>
<tr>
<th>Subskill</th>
<th>Test(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alphabet task</td>
<td>WIAT II, PAL-RW</td>
</tr>
<tr>
<td>Phoneme Segmentation</td>
<td>PAL-RW, CTOPP</td>
</tr>
<tr>
<td>Rhyming</td>
<td>PAL-RW</td>
</tr>
<tr>
<td>Rapid Naming (Letters/Numbers)</td>
<td>PAL, CTOPP</td>
</tr>
<tr>
<td>Expressive Vocabulary</td>
<td>WIAT II, PLS4</td>
</tr>
<tr>
<td>Word-specific Reading (Accuracy and Efficiency)</td>
<td>WIAT II, TOWRE</td>
</tr>
<tr>
<td>Pseudoword Reading (Accuracy and Efficiency)</td>
<td>WIAT II, PAL-RW</td>
</tr>
<tr>
<td></td>
<td>TOWRE</td>
</tr>
</tbody>
</table>
Early Identification

Percentage brought up to grade level as function of grade in which reading problem was identified (based on large-scale, N= 20,000, statewide assessment cited in Keeney & Keeney (1968):

<table>
<thead>
<tr>
<th>Grade</th>
<th>%</th>
<th>Grade</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-2</td>
<td>82</td>
<td>4</td>
<td>42</td>
</tr>
<tr>
<td>3</td>
<td>46</td>
<td>5-7</td>
<td>10-15</td>
</tr>
</tbody>
</table>
Tier 2: Assess Curriculum, Modify, Monitor, and Pre-Refer

What should be included in the reading curriculum?

- Orthographic Processes
- Phonological Processes
- Orthographic + Phonological Coordination
- Word-Recognition Mechanisms: Word Specific
- Word-Recognition Mechanisms: Phonological Decoding
- Comprehension
Tier 2: Monitoring

- Use CBM measures frequently to identify problems and to monitor student progress
  - monitor the number of correctly read words per minute from the student’s reading curriculum
  - Reading readiness CBMs might include letter-naming fluency, letter-sound fluency
Pre-referral Process

- Identify and evaluate possible solutions.
- Select and implement a solution.
- Evaluate effectiveness of solution.
- Identify non-responders.
Tier 3: Diagnosis and Treatment Plan

Tier 1 assessment and Tier 2 pre-referral intervention can prevent many reading disabilities and/or reduce their severity, but it does not eliminate all disabilities (Berninger, et al., 1999)
Decision-Focused Assessment: A Problem-Solving Model

1. Identify the problem.
2. Analyze the components of the problem.
3. Identify and evaluate possible solutions.
4. Select and implement a solution.
5. Evaluate effectiveness of solution.
Once you have identified the problem, do not waste time and resources admiring the problem.
Why both an ability and an achievement test?

WISC-III       WIAT-II

An ability test provides a probability statement about how well a student might succeed. An achievement test reflects how that probability has been operationalized.
Assess Reading

- WIAT II Reading Subtests
  - Word Reading
  - Pseudoword Decoding
  - Reading Comprehension
Reading

WIAT II Reading Composite

Word Reading Subtest
  - Letter-Sound ID
  - Word Accuracy
  - Word Automaticity

Pseudoword Decoding Subtest
  - Word Attack Skills

Reading Comprehension Subtest
  - Reading Rate
  - Sentence Comprehension
  - Passage Comprehension
  - Word Accuracy in context

Subword level

Word level

Subword level

Text level

Word and Text level
Word Reading

First 47 items are pre-word reading items that measure subword processes

- Matching alphabet letters
- Naming alphabet letters
- Matching rhyming words
- Generating rhyming words
- Matching beginning sounds
- Matching ending sounds
- Blending phonemes into words
- Alphabet principle
National Reading Panel Report (2000) notes that correlational studies identified phonological awareness and letter knowledge as excellent school-entry predictors of how well children learn to read during the first 2 years of instruction.

Early assessment of these skills prior to formal reading instruction is a reliable predictor of later reading achievement. (Torgesen, et. al., 1994)
Delays in the development of phonological awareness are frequently found in children with developmental reading disorders. (Alexander, et. al., 1991)

Adams (1990) and Lennon & Slesinski (1999) suggest that letter naming is also an appropriate measure for selecting children for differing levels of instruction.
Word Reading measures 3 components of phonological awareness (the ability to focus on and manipulate phonemes in spoken words):

- phonemic identity (Items 42-47)
- phonemic categorization (Items 34-38)
- phonemic blending (Items 39-41)
Based on the findings of Schatschneider, Francis, Foorman, Fletcher, and Mehta (1999), the following phoneme awareness tasks are ordered by level of difficulty:

1. First-sound comparison. Identify the names of pictures beginning with the same sound.
2. Blending onset-rime units into real words.
3. Blending phonemes into real words.
4. Deleting a phoneme and saying the word that remains.
5. Segmenting words into phonemes.
6. Blending phonemes into non-words.
Children who appear to have phonological processing problems might benefit from:

1. Drill-down assessment using the PAL
2. Phonological awareness training
   - Must be delivered in the context of a balanced reading program
   - Sound games such as “Find the Hidden”, “Say the Missing”, “Say the Word Without”
Reading

PAL Test Battery

Subword level
- Receptive Coding
- Expressive Coding
- RAN Letters
- Rhyming
- Syllables
- Phonemes
- Rimes
- Pseudoword Decoding

Word level
- RAN Words
- RAN Digits
- RAN Words and Digits
- Word Choice

Text level
- Story Retell*
- Sentence Sense
<table>
<thead>
<tr>
<th>WIAT II Subtest</th>
<th>Process</th>
<th>PAL-RW Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Word Reading</td>
<td>Orthographic coding in short-term memory</td>
<td>Receptive Coding Task A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Receptive Coding Task B and/or Task D</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Receptive Coding Task C and/or Task E</td>
</tr>
</tbody>
</table>
WIAT II words were selected based on high frequency use in reading texts, inclusion on standard word lists. Although the standard score is based on word reading accuracy, it is important to measure automaticity because it is a requirement for reading fluency and reading comprehension.
Children who appear to have difficulty sounding out unknown words accurately (phonics), may need

1. Explicit instruction in the alphabet principle for making connections between letters and the corresponding phonemes

2. Spelling-sound correspondences taught in the order identified in empirical research along with explicit instruction of alternations

3. Reading games such as letter or letter blends Bingo, Boggle Junior, sound-picture matching games, making words from letter cubes
Children who appear to have difficulty reading words with automaticity, may need

1. Drill with word cards or games to increase exposure to words
2. Repeated reading practice
Word Reading Skills Analysis
Identifies subword errors by type and whole word errors.

Word Reading Error Analysis
Should focus on whole word errors such as automaticity vs accuracy
self corrections
loses place easily or requires marker
makes accent errors
adds phonemes
omits phonemes
transposes phonemes
By the second half of first grade, children should be screened for purposes of determining whether they are acquiring grade appropriate knowledge of the alphabet principle.

One way to do this is with a test of nonsense or pseudowords because the student must rely on word structure knowledge and phonological abilities to decode.
Pseudoword Decoding

The 55 items represent the 44 phonemes in English. Frequently, older students who are struggling in reading will demonstrate nonmastery of the alphabet principle because they are unable to decode unfamiliar words. Measures word-recognition mechanism.
## Error analysis

- Syllable type
- Position
- Morphology
- Omission
- Substitution
- Transposition
- Accent
Reading Comprehension

Reading requires the coordination of the separate skills of word recognition and work attack, or decoding, as well as comprehension. RC Standard Score represents the examinee’s ability to understand what has been read under various conditions.
Modifications to Reading Comprehension

Administration Rules

1. Must establish basal.
2. If basal cannot be established, reverse 3 start points.
3. If cannot establish a new basal, stay with the new item set and calculate the standard score based on performance on the new item set.
4. For instructional information, you can administer easier items and use the information qualitatively.

5. If, based on your professional judgment, the assigned grade level is inappropriate for a student, you can apply the reverse rule immediately. Always reverse 3 start points.
Modifications to Reading Comprehension

Make 2 changes in the scoring procedure.

1. When you calculate the total raw score, base it only on the grade set administered. In other words, do not add the constant to give credit for preceding, unadministered items.
2. Before obtaining the standard score in the norms tables, you must convert the total raw score to a weighted raw score using the conversion table. The weighted raw score is then converted to the standard score. Always use the norms for the grade in which the student is enrolled, regardless of what grade set was administered.
Why does the raw score need to be weighted?

Raw scores have different value depending on which grade set was administered. The raw score is weighted by the difficulty level of the items in the grade set administered. This enables you to compare the weighted raw scores of students who reversed with those who did not. For the age norms, it also affords better precision when comparing the scores of students who are the same age but enrolled in different grades.
Reading Comprehension

Poor reading comprehension can also occur because a student has low verbal ability, a language disorder, or mental retardation.

Compare the RC score to FSIQ, VIQ, PAL-RW Sentence Sense, as well as other WIAT II reading subtests.
Reading Target Words

- Oral fluency
- Words in context vs. word list
- Types of oral reading errors
- Comprehension following sentences vs. passages
Intervention

- Comprehension monitoring
- Cooperative learning
- Graphic and semantic organizers
- Story structure
- Question answering
- Question generation
- Summarization
- Multiple-strategy teaching
Intervention

Recent research focuses not so much on the kinds of strategies that benefit readers, but more on the most effective ways to teach students to use strategies.

- reciprocal teaching
- direct explanation approach
Intervention

- Reciprocal teaching instructs students to use 4 strategies: predicting, questioning, seeking clarification, summarizing.

- Was found to be more effective when paired with direct teaching when teachers model and provide decreased feedback as the student becomes more independent in strategy use.
Vocabulary

Vocabulary instruction is critical to any reading comprehension approach.

Compare performance on the vocabulary items per passage, expressive vocabulary, and receptive vocabulary in LC.
NRP recommends

- vocabulary words should come from content-learning materials
- explicit vocabulary instruction
- pre-teaching new words
- teach as many connections to a specific word as possible with multiple exposures to a word
Reading Rate

Is expressed as the relationship between reading speed and accuracy.
Scores fall within 1 of 4 quadrants.

Q 1: good speed, good comprehension
Q 2: good speed, poor comprehension
Q 3: poor speed, good comprehension
Q 4: poor speed, poor comprehension
Intervention

Q 1: keep doing what you’re doing
Q 2: focus on strategy instruction
Q 3: increase fluency with repeated readings, increased time in oral reading, paired reading, read-alongs
Q 4: increase decoding skills, develop automaticity of word recognition, increase reading fluency
<table>
<thead>
<tr>
<th>WIAT II Subtest</th>
<th>Process</th>
<th>PAL-RW Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading Rate</td>
<td>Automaticity of letter coding</td>
<td>RAN Letters</td>
</tr>
<tr>
<td></td>
<td>Word automaticity</td>
<td>Receptive Coding Task B and/or D</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Receptive Coding Task C and/or E</td>
</tr>
<tr>
<td></td>
<td></td>
<td>RAN Words</td>
</tr>
</tbody>
</table>
Intervention

When a reader is accurate but not automatic at word recognition, considerable amounts of mental energy or effort are required. The goal for reading fluency must be beyond accuracy to automaticity. (Samuels, 1988)
April 7, 2001
Associated Press

- 2/3 of 4th graders tested in a national survey can’t read proficiently
- The gaps between the best and the worst readers are widening
- Results encouraged the reading initiative plan which would try to get every pupil reading by the end of third grade
- Reid Lyon, Director of NICHD, suggested a moratorium against unproven reading instruction methods
What is dyslexia

- Not all learning disabilities involve reading.
- Not all reading disabilities are dyslexia.
- Dyslexia has changing phenotype (observable behavioral signs) across development.

**First signs in kindergarten:** Unusual difficulty in learning to name letters and attach phonemes to letters. *(Orthographic-Phonological Connections)*
1st grade—Unusual difficulty learning to read single words out of sentence context (sight words and/or phonological decoding). Does not go away with maturation. With systematic, intensive, and appropriate instruction, learn to read single words accurately. Assessing reading only in context may mask the difficulty dyslexics have in reading single words.
2nd grade on—May learn to read single words accurately but reading rate (automaticity of single word reading and/or fluency of oral reading of text) and spelling problems typically persist and are more difficult to remediate. Silent reading comprehension tends to be better than oral reading.
A dissociation (uneven development) in the functional reading system in which the word level is impaired relative to the text level and verbal reasoning.

Dyslexia = Impaired + Word.

Dyslexia cannot be diagnosed on the basis of letter reversals.
Key Points About the Assessment of Reading

1. Identify how a child’s performance compares to age- or grade-mates
2. Identify specific skill deficits
3. Identify specific skill strengths
4. Evaluate all levels of language
   - Subword, Word, Sentence, Text
5. Identify dissociations between areas assessed by subtests
6. Develop recommendations based on student performance and research-based interventions.
Assess Math

- WIAT II Math Subtests
  - Numerical Operations
  - Mathematics Reasoning
Numerical Operations

- Manual table 7.3 (p. 163) matches items to skills for purposes of Skills Analysis
- Error analysis requires use of pencil w/o eraser and can include asking the student to work a problem aloud
### Skill Analysis
- Process
- Continuum
- Splinter skills

### Error Analysis
- Basic Facts
- Attention to detail
- Procedural
- Spatial

### Numerical Operations (continued on next page)
Possible Reasons for Math Calculation Problems

- Poor memory
- Poor attention
- Poor visual-spatial abilities
- Limited language skills
- Poor procedural knowledge
- Limited instruction
Intervention

- Teachers should teach concepts and thinking processes underlying math calculation. Think alouds are useful.

- Math facts must be learned to automaticity. Additional drill and practice may be appropriate.

- Others may need help in sequential procedures. Calculation recipes and guided practice can be helpful.

- Some may have directional or spatial difficulties and could benefit from instructional modifications such as turning their NB paper sideways for columns.
Intervention

- Instructional practices can include
  - Use of manipulatives
  - Modeling
  - Shaping
  - Direct instruction
  - Guided practice
  - Immediate feedback
  - Instruction in calculation strategies such as “count ons”, “count bys”, “doubles”, magic 9’s
Magic 9's

0 \times 9 = 0
1 \times 9 = 9
2 \times 9 = 18
3 \times 9 = 27
4 \times 9 = 36
5 \times 9 = 45

6 \times 9 = 54
7 \times 9 = 63
8 \times 9 = 72
9 \times 9 = 81
10 \times 9 = 90
Math Reasoning

- Manual table 7.4 (p. 165) matches items to skills for purposes of Skills Analysis
- Same table maps skills against typical state standards or benchmarks
Math Reasoning

- Conduct error analysis by determining if student has problems
  - Discriminating essential from non-essential information
  - Identifying required math process(es)
  - Setting up the calculation problem
  - Correctly calculating the answer
Math Reasoning

- Conduct error analysis by observing the strategies employed, watching the student solve problems, listening for spontaneous verbalizations, and reviewing “scratch paper”

- Strategies employed might include
  - Guessing with or without checking
  - Drawing pictures or tables
  - Developing or recording a formula
  - Estimating an answer and working backwards
  - Talking through alternative procedures
### Math Reasoning

<table>
<thead>
<tr>
<th>Item</th>
<th>Response</th>
<th>Score</th>
<th>Skill</th>
</tr>
</thead>
<tbody>
<tr>
<td>41</td>
<td>18</td>
<td>0</td>
<td>Use non-standard and standard units to measure</td>
</tr>
<tr>
<td>42</td>
<td>75</td>
<td>0</td>
<td>Use grids and graphs to make comparisons, draw conclusions, or answer questions</td>
</tr>
<tr>
<td>43</td>
<td>3/6, 1/2</td>
<td>0, 1</td>
<td>Use quantities less than a whole</td>
</tr>
<tr>
<td>44</td>
<td>35 cents</td>
<td>0</td>
<td>Create and solve addition and subtraction problems using money</td>
</tr>
<tr>
<td>45</td>
<td>B</td>
<td>0, 1</td>
<td>Use geometric and spatial reasoning to solve problems</td>
</tr>
<tr>
<td>46</td>
<td>1/6</td>
<td>0, 1</td>
<td>Use quantities less than a whole</td>
</tr>
<tr>
<td>47</td>
<td>1/5, 1/4, 1/3, 1/2, or 0.2, 0.25, 0.3, 0.5</td>
<td>0</td>
<td>Use quantities less than a whole</td>
</tr>
<tr>
<td>48</td>
<td>How many games she played</td>
<td>0, 1</td>
<td>Create and solve multiplication and division problems using whole numbers</td>
</tr>
<tr>
<td>49</td>
<td>85</td>
<td>0, 1</td>
<td>Create and solve addition and division problems using whole numbers</td>
</tr>
<tr>
<td>50</td>
<td>120</td>
<td>0, 1</td>
<td>Use patterns to solve problems</td>
</tr>
<tr>
<td>51</td>
<td>C</td>
<td>0</td>
<td>Use geometric and spatial reasoning to solve problems</td>
</tr>
<tr>
<td>52</td>
<td>8 1/2 hours</td>
<td>0, 1</td>
<td>Tell time and use time to compare and order events</td>
</tr>
<tr>
<td>53</td>
<td>75</td>
<td>0, 1</td>
<td>Use quantities less than a whole</td>
</tr>
<tr>
<td>54</td>
<td>$46.00</td>
<td>0, 1</td>
<td>Create and solve multiplication and division problems using money</td>
</tr>
<tr>
<td>55</td>
<td>3/4, 9/12, 75%</td>
<td>0, 1</td>
<td>Use quantities less than a whole</td>
</tr>
<tr>
<td>56</td>
<td>C</td>
<td>0, 1</td>
<td>Use theoretical and experimental probability to draw conclusions, answer questions, and make predictions</td>
</tr>
<tr>
<td>57</td>
<td>8</td>
<td>0, 1</td>
<td>Use quantities less than a whole</td>
</tr>
<tr>
<td>58</td>
<td>14</td>
<td>0, 1</td>
<td>Use grids and graphs to make comparisons, draw conclusions, or answer questions</td>
</tr>
<tr>
<td>59</td>
<td>8</td>
<td>0, 1</td>
<td>Solve problems using money</td>
</tr>
<tr>
<td>60</td>
<td>$95.00</td>
<td>0, 1</td>
<td>Use quantities less than a whole</td>
</tr>
<tr>
<td>61</td>
<td>Sweet Shop, brown one cake</td>
<td>0, 1</td>
<td>Use non-standard and standard units to measure</td>
</tr>
<tr>
<td>62</td>
<td>20</td>
<td>0, 1</td>
<td>Solve problems related to money</td>
</tr>
<tr>
<td>63</td>
<td>$14.00</td>
<td>0, 1</td>
<td>Create and solve multiplication and division problems using whole numbers</td>
</tr>
<tr>
<td>64</td>
<td>90</td>
<td>0</td>
<td>Solve problems related to money</td>
</tr>
<tr>
<td>65</td>
<td>$22.50</td>
<td>0</td>
<td>Use theoretical and experimental probability to draw conclusions, answer questions, and make predictions</td>
</tr>
<tr>
<td>66</td>
<td>24</td>
<td>0</td>
<td>Use theoretical and experimental probability to draw conclusions, answer questions, and make predictions</td>
</tr>
<tr>
<td>67</td>
<td>1/20 ,.05 , 5%</td>
<td>0</td>
<td>Use theoretical and experimental probability to draw conclusions, answer questions, and make predictions</td>
</tr>
</tbody>
</table>

**Math Reasoning Qualitative Observations**

Note how frequently a behavior occurred by checking the appropriate box.

<table>
<thead>
<tr>
<th>Never</th>
<th>Seldom</th>
<th>Often</th>
<th>Always</th>
<th>Not Observed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uses paper and pencil to complete problem</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organizes work on scratch paper to facilitate problem-solving</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Uses concrete aids (e.g., fingers) for computation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breaks multi-step problem into smaller units to obtain solution</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disregards component(s) of word-problem that is not required for solution</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Uses correct operation(s) to compute solution</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Uses repeated addition as a substitute for multiplication when problem-solving</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Uses repeated subtraction as a substitute for division when problem-solving</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employs use of an effective strategy (e.g., working backwards, drawing pictures, systematic guessing, or making a table) to problem solve</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Possible Reasons for Math Reasoning Problems

- Lack of basic facts
- Inability to discriminate relevant from extraneous info
- Poor reasoning ability
- Limited language skills
- Poor procedural knowledge
- Limited instruction
Dyscalculia

- a neurologically based disability, is rare (Steeves, 1983)
- From an instructional point of view, it is more appropriate to describe the specific areas of math affected rather than merely label the student
Montague and Bos (1986) suggest an 8 step process to help students with math reasoning deficits:

1. Read the problem aloud and make sure you know all the words.
2. Paraphrase the problem aloud and identify the question being asked.
3. Visualize the problem (you may want to draw it).
4. State the problem again and underline all of the important information.
Intervention

5. Hypothesize a solution strategy.
6. Estimate the answer.
7. Calculate the answer.
8. Check your work for accuracy.
Key Points About the Assessment of Math

1. Identify how a child's performance compares to age- or grade-mates
2. Identify specific skill deficits
3. Identify specific skill strengths
4. Use error analysis to determine where the process is breaking down
5. Identify dissociations between areas assessed by subtests
6. Develop recommendations based on student performance and research-based interventions.
Tier One Screening Batteries for Writing

First Grade: Alphabet Writing, Receptive Coding Tasks A and B, WIAT II Letter Naming, RAN Letters, PAL Rhyming and Syllables, PAL Pseudoword Decoding

Assesses orthographic processes, phonological processes, and their connections
Second Grade: Alphabet Writing, Receptive Coding Tasks B and C, WIAT II RAN Letters, PAL Phonemes and Rimes, PAL Pseudoword Decoding, WIAT II Spelling
Assesses orthographic processes, phonological processes, and their connections
Assess Written Language

- WIAT II Written Language Subtests
  - Spelling
  - Written Expression
Written Language

WIAT II Written Language Composite

- Spelling Subtest
  - Letter Production
  - Word Spelling
  - Homonyms
  - Alphabet Writing (letter production)
  - Word Fluency (word production)
  - Sentence Generation
  - Sentence Combining
  - Discourse Production

- Written Expression Subtest

Subword and word level
Subword level
Word level
Text level
Functional Writing Systems

- Assess multiple components in writing -- handwriting, spelling, and composing,
  - **Handwriting** is measured quantitatively with timed alphabet writing and qualitatively with all of the Written Expression items.
  - **Spelling** is measured by the Spelling subtest and Mechanics on the paragraph/essay.
  - **Composing** is measured with Sentences and Paragraph/Essay items.
Levels of Language

Low-Level Skills: Transcription in Writing (Handwriting and Spelling)

High-Level Skills: Composition in Writing (Text/Discourse)

General Principle: Teach Low Level Skills to Automaticity to Free-Up Limited Resources of Working Memory for the High-Level Skills
Manual table 7.5 (p 168) provides a structure for the analysis of spelling errors based on a developmental model. Types of errors are matched to WIAT II misspellings and to intervention recommendations.
Error Analysis

Syllable types
Morphology
Homonyms
Contractions

Developmental Level

Compare to
Word Reading
& Pseudoword Decoding
If student has problem in WIAT II Spelling and/or Word Reading, give PAL-RW receptive and/or expressive (orthographic) coding subtests, phonological subtests—syllable, phoneme, rime, CTOPP nonword memory, RAN, and look at Pseudoword Decoding.

Determine if a spelling problem is specific to writing from dictation (Spelling), or functional written communication (Paragraph or Essay).
PAL Drill Downs for Spelling

- Phonological coding in STM
  - Phonemes
  - Rimes
- Orthographic coding in STM
  - Receptive Coding Tasks A – E
- Representation in LTM
  - Word Choice
- Integrating receptive coding with written output
  - Expressive Coding
Written Expression

- Timed alphabet writing is especially diagnostic for children who have not automatized letter formation or who have difficulty recalling alphabet sequence.

- You may wish to have the child continue to write the entire alphabet from memory.
  - By the end of Grade 1, children should be able to produce all 26 letters.
  - Second graders should be writing them automatically.
Early Writing Skills

- At age 3, most children can draw a circle and the rudiments of a human figure.
- By 5 or 6, children can generally draw a square, a triangle, intersecting lines, and figures that look like people or objects such as houses.
- There can be considerable variability in the early writing of kindergarten children.
PAL Drill Downs for Handwriting

- Handwriting automaticity
  - Alphabet writing
  - Copying
- Finger function
  - Finger Sense
- Storing or retrieving letter forms in memory
  - Receptive Coding
  - Expressive Coding
Intervention for Handwriting

- Teach letter writing to automaticity.
  - Tracing activities until letter formation becomes automatic
  - PAL Handwriting Intervention
- Help the student get a mental picture of letter forms.
- For persistent reversals, ask student to
  - Verbalize letter formation
  - Associate a problematic letter with a non-problematic one (start \(d\) just like you start \(a\))
  - Associate a letter with a word (\(d\) and \(dad\))
Word Fluency items appear on both Written and Oral Expression subtests and measure the ability to generate a variety of words that fit a specific category within time limits.

- Overall poverty of words could indicate limited exposure to or lack of experience or a language deficit. Look at WISC III Vocabulary.
- Low score could also indicate a difficulty in accessing words from the memory store or a rate-based problem. Look at other rate-based items.
- Review the recall strategies employed, loss of set, repetitions (lack of self monitoring). Look at Executive Function tasks on WISC III PI, DKEFS, NEPSY.
The sentence items measure the ability to produce grammatically correct sentences in response to semantic, visual, or verbal cues.

- Content errors may occur when the examinee is unable to combine or summarize multiple pieces of information into a single, concise statement.
- Mechanical errors may occur when basic punctuation and capitalization rules are broken.
- Scoring rules were selected, in part, based on the most discriminating items between those in the Standardization sample with and without writing disorders.
If student has problem in WIAT II Sentence Combining, Paragraph Writing, Essay Writing or Reading Comprehension, look at WISC III Verbal Comprehension Factor and CELF III Sentence Formulation.

If student has problem in WIAT II Word Count (a supplemental score that indicates writing fluency), look at WIAT II Spelling, PAL Alphabet Writing and Copy Tasks, and PAL Finger Sense.
 Task B

John's car was low on fuel. He stopped his car and asked a pedestrian for directions to the nearest gas station. Here are the directions he received: Make a right at Main Street. Go past three traffic lights to the corner of First Street and Main Street, where there is a fire station on the left. Make a right immediately after the fire station. Go one block until you reach a stop sign. In the next block, on your right, you will see a gas station that is open 24 hours a day.
SPELLING

13. ____________________
14. is____________________
15. map____________________
16. big____________________
17. fris____________________
18. oth the a__________________
19. lo e____________________
20. hand____________________
21. candi____________________
22. ta____________________
23. undr____________________
24. fit____________________
25. grup____________________
26. trag____________________
27. na____________________
28. ______________________
29. ______________________
30. ______________________
31. ______________________
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55. ______________________
56. ______________________
57. ______________________
58. ______________________
59. ______________________
60. ______________________
WRITTEN EXPRESSION

1. The dog has fur.
   The cat has fur.
   
2. The dog and the cat have fur.

3. The frog is green.
   The frog jumps.
   
4. Mark has a sister named Ann.
   Ann is six years old.
   
5. The red team won the game.
   Petra kicked the winning goal.

6. Antonio is a fast runner.
   Antonio is a strong student.
   Antonio won the Best Athlete award.
Paragraph and Essay Writing measure the student's ability to communicate ideas in written form. When a student is having difficulty, you should first determine whether handwriting or spelling difficulties are contributing. Under development of transcription skills and related low-level neurodevelopmental processes are often the underlying cause of written expression problems. (Berninger, et. al. 1991, 1994, 1998)
Even intellectually gifted students are sometimes misdiagnosed as unmotivated when actually they have low-level writing disabilities (Yates, et. al., 1994)

For empirically validated interventions aimed at simultaneous improvement of high-level and low-level processes, see PAL Guides for Intervention (Berninger, 1999).
PAL Drill Downs for Composition
Fluency or Quality

- Handwriting automaticity
  - Alphabet writing
- Orthographic coding in STM
  - Receptive Coding Tasks A - E
- Finger function
  - Finger Sense
- Integrating receptive coding with written output
  - Expressive Coding
- Representation in LTM
  - Word Choice
Dyslexia is a Language Disorder

- May be related to subtle aural/oral language processing problems.
- Manifests itself in written language at the word level.
- Language markers: Deficits in rapid automatic naming, orthographic, and phonological skills. PAL assesses all these.
What is dysgraphia

- Developmental dissociation between transcription and text generation skills in writing development
- Dysgraphia = Impaired + Hand (Language by Hand Produced by the Grapho-Motor System)
- Transcription Skills affected are handwriting and/or spelling.
To diagnose dyslexia or dysgraphia, must rule out mental retardation, pervasive developmental disorder, autism, primary language disorder, and slow(er) learner.

Need to assess these domains of development: gross and fine motor, cognitive (memory and abstract reasoning), language and communication, attention and executive function, and social/emotional.
Oral Language

- Preschoolers may learn 2 to 4 new words per day. By age 3, they use 3 and 4 word sentences are are beginning to tell personal narratives.

- By age 5 or 6, children may have a vocabulary of 8,000 to 15,000 words, can use basic sentence structures, and can tell relatively good stories.
Test Behaviors of Individuals with Receptive Language Deficits

- Often asks to have information repeated.
- Has difficulty understanding what has been said.
- May respond with off-base answers.
- May talk excessively but provide little information.
Test Behaviors of Individuals with Expressive Language Deficits

- May have difficulty thinking of specific words.
- May misuse words or labels.
- May appear disorganized when speaking.
- Frequently relies on visual cues for information.
Interventions for Students with Language Problems

- Expect difficulties with the acquisition of academic skills in all areas.
- Develop new vocabulary prior to instruction.
- Use visual cues when possible including concrete examples and manipulatives.
- Give concise instructions while demonstrating what the student is to do.
- Provide extra time for the student to respond or begin working.
- Give the student opportunities to demonstrate understanding.

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Determine the Value of composite Overall skill strengths and weaknesses Range of scores by using C. I.
Best Practice

- Select an ability measure and an achievement measure that were co-normed on the same population, close in time.
- Use FSIQ unless you have compelling evidence that it is not the best representation of the student’s ability.
- If you report grade equivalent scores, explain what they do and do not mean.
- Calculate the discrepancy based on the difference between predicted achievement, based on the ability score, and actual achievement.
- Investigate statistical significance and base rates.
How can we reduce professional judgment error in a problem-solving model?

- Consider a range of plausible alternative hypothesis and regard each one as tenable until it is ruled out.
- Help parents and teachers establish a range of plausible interventions that can be refined through problem solving and experimentation.
- Use decision aids to reduce the reliance on memory.
- Accept uncertain predictions and offer them as potential patterns of outcomes.
Judgmental errors are made when professionals go beyond their data; but even with good data, only descriptive estimates of probable patterns of behavior can be made.