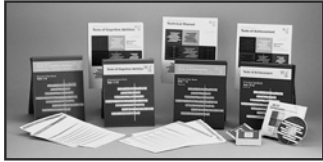


Use of the WJ III



Advocate Academy Webinar
Nancy Mather, Ph.D.

WJ III Webinar Topics

Part 1: Overview, Administration, and Scoring of the WJ III

Part 2: Interpretation of the WJ III



Author Team



Dr. Kevin McGrew

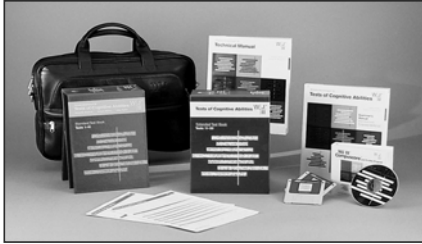


Dr. Richard Woodcock



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Tests of Cognitive Abilities: WJ III COG



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Tests of Achievement: WJ III ACH

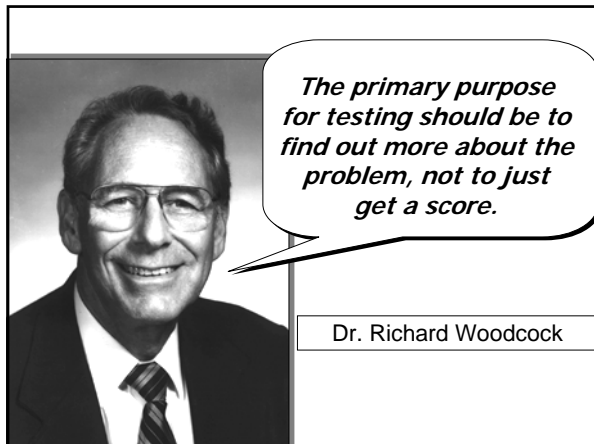


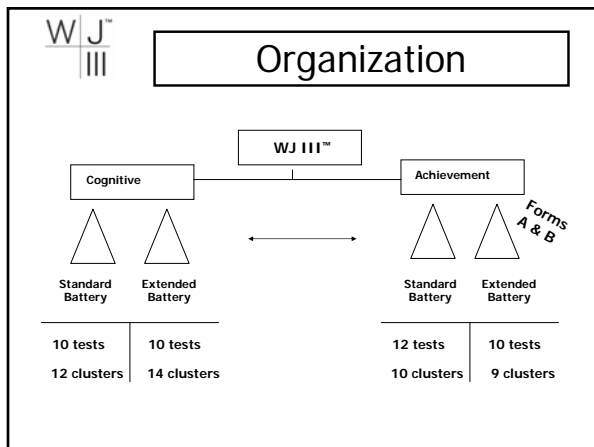
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Assessment Goals

- What does the student do well?
- Why is the student having difficulty in learning?
- What are the specific characteristics that impede learning for this student?
- How can this student be helped to learn?







Organization of 20 Cognitive Tests

<u>Standard Battery</u>	<u>Extended Battery</u>
Verbal Comprehension	General Information
Visual-Auditory Learning	Retrieval Fluency
Spatial Relations	Picture Recognition
Sound Blending	Auditory Attention
Concept Formation	Analysis-Synthesis
Visual Matching	Decision Speed
Numbers Reversed	Memory for Words
Incomplete Words	Rapid Picture Naming
Auditory Working Memory	Planning
Vis-Aud Learning-Delayed	Pair Cancellation

WJ III Diagnostic Supplement

Designed to be used in conjunction with the WJ III COG

- Provides greater diagnostic utility of broad and narrow abilities
- Offers improved assessment options for linguistically and culturally diverse populations

WJ III Diagnostic Supplement

Includes 11 tests that offer new interpretive options for the WJ III

- Memory for Names
- Visual Closure
- Sound Patterns-Voice
- Number Series
- Number Matrices
- Cross Out
- Memory for Sentences
- Block Rotation
- Sound Patterns-Music
- Memory for Names-Delayed
- Bilingual Verbal Comprehension (Spanish/English)



Organization of 22 Achievement Tests

Standard Battery

- Letter-Word Identification
- Reading Fluency
- Passage Comprehension
- Story Recall
- Understanding Directions
- Calculation
- Math Fluency
- Applied Problems
- Spelling
- Writing Fluency
- Writing Samples
- Story Recall-Delayed
- Handwriting Legibility Scale*

Extended Battery

- Word Attack
- Reading Vocabulary
- Picture Vocabulary
- Oral Comprehension
- Quantitative Concepts
- Editing
- Academic Knowledge
- Spelling of Sounds
- Sound Awareness
- Punctuation and Capitalization

WJ III

Selective Testing Table

Located in Test Books and Examiner Manual

	Reading	Oral Language	Math	Written Lang.	Other Clusters
Test 1: Letter Identification	•	•			
Test 2: Reading Fluency	•				
Test 3: Story Recall	•	•	•	•	•
Test 4: Informational Directions	•	•	•	•	•
Test 5: Calculation			•	•	•
Test 6: Math Fluency			•	•	•
Test 7: Spelling				•	•
Test 8: Writing Fluency				•	•
Test 9: Passage Comprehension	•	•			•
Test 10: Applied Problems			•	•	•
Test 11: Writing Samples				•	•
Test 12: Story Recall-Content	•	•			•
Test 13: Word Attack	•				•
Test 14: Picture Vocabulary	•	•			•
Test 15: Oral Comprehension	•	•			•
Test 16: Writing				•	•
Test 17: Reading Vocabulary	•				•
Test 18: Quantitative Concepts			•		•
Test 19: Academic Knowledge				•	•
Test 20: Spelling of Sounds				•	•
Test 21: Rapid Assessment					•
Test 22: Phonics & Capitalization					•

The Principle of Selective Testing

- Choose which tests to administer based on the referral question
- Incorporate data and information from other components of the evaluation (e.g., other and past tests, teacher and parent reports)
- Attempt to minimize testing time but gather necessary information for accurate decision making

WJ III Clusters Relevant to Reading Problems

Phonological Awareness


Processing Speed

Phoneme/Grapheme Knowledge (Phonics)

Academic Fluency (Reading and Writing Rate)

Basic Reading and Writing Skills

Oral Language

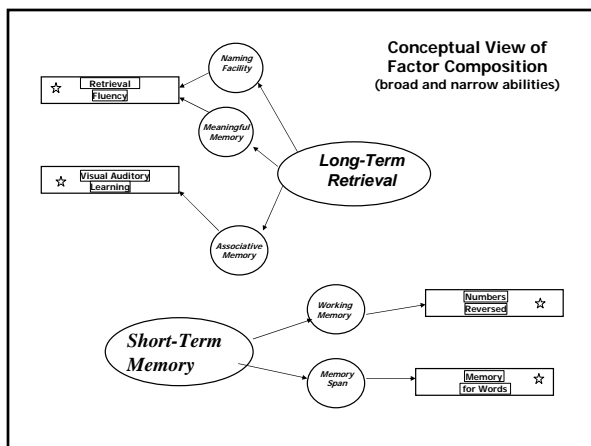


Use of Cluster Scores


- Clusters are composed of at least two tests
- Designed to be used for interpretation
- The tests are narrow abilities measuring different facets of a broader ability (e.g., the Basic Reading Skills cluster consists of Letter-Word Identification which measures word recognition and Word Attack which measures phonics skills)

Concerns

- Conclusions are based on one low test score and not substantiated with other data.
- Evaluators only use the Standard battery when results from tests from the Extended battery would have been helpful.
- Evaluators do too much or too little testing.



Learning Disability Eligibility	
8 IDEA 2004 Areas	WJ III® Tests
Oral Expression	Story Recall, Picture Vocabulary
Listening Comprehension	Understanding Directions, Oral Comprehension
Written Expression	Writing Fluency, Writing Samples
Basic Reading Skills	Letter-Word Identification, Word Attack
Reading Comprehension	Passage Comprehension, Reading Vocabulary
Mathematics Calculation	Calculation, Math Fluency
Mathematics Reasoning	Applied Problems, Quantitative Concepts
Reading Fluency	Reading Fluency




Basis of Interpretation

Cattell-Horn-Carroll (CHC) Theory
 Combination of two research-based, multiple factor theories of intelligence:

Gf-Gc Theory
 (Raymond Cattell & John Horn)

Three-Stratum Theory
 (John Carroll)

WJ III COG measures 7 CHC factors



7 CHC Cognitive Factors

Comprehension-Knowledge (*Gc*): The breadth and depth of knowledge of a culture

Long-Term Retrieval (*Gr*): ability to store and retrieve information

Visual-Spatial Thinking (*Gv*): ability to perceive, analyze, synthesize and think with visual patterns

Auditory Processing (*Ga*): ability to analyze, synthesize and discriminate auditory stimuli

Fluid Reasoning (*Gf*): ability to reason, form concepts, & solve problems (*using unfamiliar information or novel procedures*)

Processing Speed (*Gs*): ability to perform automatic, speeded cognitive tasks under pressure to maintain focused attention

Short-Term Memory (*Gsm*): ability to apprehend and hold information in immediate awareness and then use it within a few seconds



7 CHC Cognitive Factors

Comprehension-Knowledge (<i>Gc</i>)	Verbal Comprehension General Information
Long-Term Retrieval (<i>Glr</i>)	Visual-Aud Learning Retrieval Fluency
Visual-Spatial Thinking (<i>Gv</i>)	Spatial Relations Picture Recognition
Auditory Processing (<i>Ga</i>)	Sound Blending Auditory Attention
Fluid Reasoning (<i>Gf</i>)	Concept Formation Analysis Synthesis
Processing Speed (<i>Gs</i>)	Visual Matching Decision Speed
Short-Term Memory (<i>Gsm</i>)	Numbers Reversed Memory for Words

Section 2: Score Interpretation

Compuscore and Profiles Program





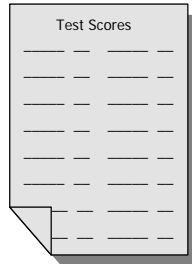
Levels of Interpretive Information

Level 1	Qualitative, informal, error analysis Test Session Observations Checklist	Useful for instructional planning Useful for behavioral observations
Level 2	Level of Development Level of Instruction	Age Equivalent Grade Equivalent
Level 3	Level of Proficiency Easy to Difficult Range	Relative Proficiency Index, CALP Developmental/Instructional Zone
Level 4	Relative Standing in Group Rank Order Significantly high or low standing	Standard Scores Percentile Ranks SD DIFF, Discrepancy PR

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Raw scores (the number correct) are converted into various types of derived scores:

- Age/Grade Equivalents
- RPIs and Instructional Zones
- Standard Scores/Percentile Ranks





Achievement Tests

CLUSTER/Test	RAW	GE	EASY to DIFF		RPI	PR	SS (68% BAND)
Letter-Word Identification	36	2.4	2.2	2.7	2/90	3	72 (69-75)
Reading Fluency	29	3.1	2.6	3.6	27/90	17	86 (84-88)
Story Recall	-	5.9	1.1	>18.0	91/90	57	103 (94-111)
Understanding Directions	-	4.8	2.6	9.5	89/90	48	99 (94-104)
Calculation	19	5.3	4.2	6.7	92/90	56	102 (96-109)
Math Fluency	80	6.6	4.2	9.8	95/90	78	112 (109-114)
Spelling	20	1.7	1.3	2.1	5/90	2	69 (64-73)
Writing Fluency	14	4.2	3.3	5.3	80/90	35	94 (90-99)
Passage Comprehension	28	3.7	2.8	5.3	78/90	32	93 (89-97)
Applied Problems	43	8.1	6.4	11.1	99/90	88	118 (114-122)
Writing Samples	11-C	3.2	1.9	7.9	84/90	24	90 (81-98)
Word Attack	7	1.8	1.6	2.1	12/90	9	80 (76-83)
Picture Vocabulary	29	8.2	6.0	11.1	98/90	80	113 (108-118)
Oral Comprehension	21	6.0	4.0	9.5	93/90	60	104 (99-109)
Editing	7	2.9	2.3	3.6	45/90	14	84 (79-88)
Reading Vocabulary	-	4.3	2.9	6.1	85/90	41	97 (93-100)
Quantitative Concepts	-	6.4	5.0	8.5	96/90	77	111 (105-117)
Academic Knowledge	-	9.3	7.3	12.5	99/90	95	125 (120-131)
Spelling of Sounds	17	1.7	1.2	2.8	55/90	8	79 (75-84)
Sound Awareness	24	1.5	K-9	2.4	37/90	5	75 (71-78)
Punctuation & Capitals	15	3.6	2.7	5.0	75/90	25	90 (84-95)

Caution

All of the scores provide different types of information and sometimes an evaluator will only look at one type of score and not the others.

Age and Grade Equivalents

Reflects the individual's performance in terms of the age or grade level at which the average score is the same as the individual's score.

Justin is an eighth-grader who is functioning at approximately the third-grade level in reading.

Sandra's score suggests that her performance is comparable to that of an average eight-year old.

Caution

- Age and grade scores are not equal interval units and growth is far more important in most areas at a younger age. For example, tremendous growth occurs in reading between Grades 1 to 3, but very little growth occurs between Grades 10 to 12.

Age- or Grade-Based Norms

- Select the most appropriate reference group
 - Grade norms: K-12, 2-year college, and 4-year college including first year of graduate school
 - Age norms: 2 - 90+
- Age and Grade Equivalent scores will be the same for age- or grade-based norms.
- Use same reference group when comparing results from different tests (e.g., WISC-IV to WJ III ACH) or WJ III COG to WJ III ACH (i.e., age to age, grade to grade). Most IQ tests just have age norms.
- Grade norms in school-based settings; age norms in ungraded settings
- Score both ways (e.g., cases of retention).

Caution

Need to look at both age-based and grade-based norms when the student has been retained. Need to see how they compare to their chronological age-mates as well as their current grade peers.



Achievement Tests

CLUSTER/Test	RAW	GE	EASY to DIFF		RPI	PR	SS (68% BAND)
Letter-Word Identification	36	2.4	2.2	2.7	2/90	3	72 (69-75)
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Relative Proficiency Index (RPI)

Reflects the individual's proficiency on tasks that the average age or grade mate would have 90% proficiency (RPIs range from 0/90 to 100/90). Predicts level of success on similar tasks.

When average grade mates would have 90% success in spelling, Sandy is predicted to have only 3% success (RPI = 3/90).

Bennett's RPI of 98/90 on the Math Reasoning cluster indicates his performance would be very advanced compared to his grade peers.

The Relative Proficiency Index (RPI) represents a person's quality of performance on reference tasks. RPIs are analogous to the Snellen Index which describes quality of visual acuity.



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RPI	Proficiency Level	Developmental Level	Functional Level
97/90 to 100/90	advanced	advanced	advanced
75/90 to 96/90	average	age-appropriate	normal limits
25/90 to 74/90	limited	mildly delayed	mildly impaired
4/90 to 24/90	very limited	moderately delayed	moderately impaired
0/90 to 3/90	negligible	extremely delayed	severely impaired

**Criterion-Referenced
Interpretation of RPI Scores**

RPI	Instructional Level
96/90 to 100/90	Independent
76/90 to 95/90	Instructional
75/90 and below	Frustration

Schrank, F.A., & Woodcock, R.W. (2003). Report Writer for the WJ III. Itasca, IL: Riverside.

Uniqueness of Scores

Word Attack Grade 2.9 College 16.9

Percentile Rank/ Standard Score	5/75	5/75
Grade Equivalent	1.1	6.3
RPI	10/90	68/90

Percentile Ranks

Describes the percent of subjects from the comparison group (age- or grade-based norms) who had scores the same or lower than the subject's score (PR ranges from .1 to 99.9).

Kay's percentile rank of 96 on the Math Reasoning cluster indicates that she did as well as or better than 96 out of 100 grade mates.

Kevin's percentile rank of .3 on the Basic Writing Skills cluster indicates that only 3 in 1000 grade mates would have a score the same or lower.

Standard Scores

Describes the individual's performance relative to the average performance of the comparison group (age or grade).

Amy's standard score of 122 indicates that her performance on the Broad Reading Cluster is in the Superior range compared to her grade peers.

Jesse's reading skills fell in the Low Average range (SS: 85) when compared to his age peers.

Maria's standard score of 91 (SS±1 SEM = 87-95) on the Knowledge cluster is within the Average range.

How does the RPI differ from Peer Comparison Scores?

Peer comparison scores (Standard Scores and Percentile Ranks) show relative standing in a reference group

RPI: Shows how close a person comes to meeting a set level of proficiency on a task

Adult Age Groups

Visual Acuity	25-34	35-44	45-54	55-64	65-74	75-79
20/10+	2.1	1.5	0.7	-	-	-
20/15	50.4	49.5	18.2	4.2	0.9	-
20/20	75.1	76.7	44.6	21.0	5.7	1.5
20/30	85.5	86.3	68.3	42.8	25.0	14.6
20/40	89.1	88.8	76.6	54.0	38.3	32.2
20/50	91.0	90.3	82.9	62.9	48.2	44.5
20/70	92.0	91.9	86.2	70.0	55.1	58.0
20/100	95.6	94.7	94.5	90.2	84.0	86.0
20/200	98.6	97.1	98.3	97.9	93.2	92.0
<20/200	100+	99.4	99.8	100+	99.8	100.0

Average level of Performance (50th PR)

(Data are cumulative percents from NCHS, NHS: Binocular Visual Acuity of Adults, 1960-62)
© Institute for Applied Psychometrics 02-14-03



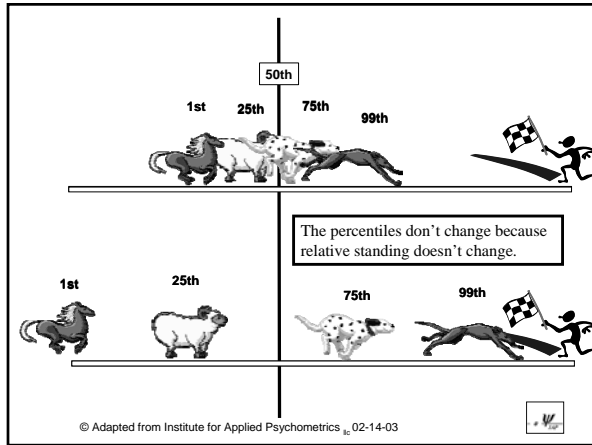
The two types of scores are providing two different types of information:

RPI:

How well can you see?

Percentile Rank:

How many people within a particular age range can see that well?



Two Types of WJ III Profiles

- Age/Grade Profile (shows level of development in an ability)
- Standard Score/Percentile Rank Profile (shows standing compared to peers in an ability)

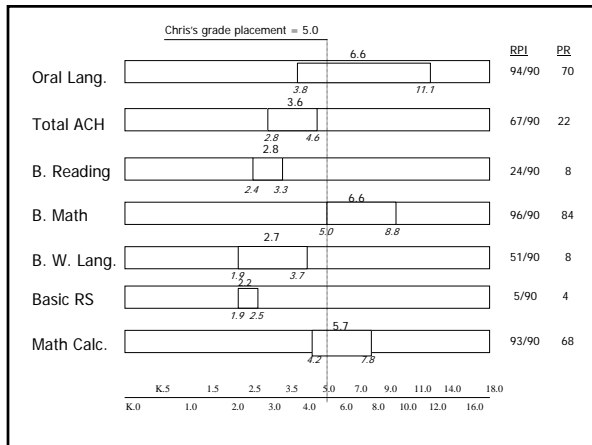
Developmental/Instructional Zones (Age/Grade Profile)

Reflects the range from easy (independent level) to difficult (frustration level).

Easy (96/90)	Instructional (90/90)	Difficult (75/90)
------------------------	---------------------------------	-----------------------------

Rebecca's Instructional Zone indicates she will find reading tasks to be easy at beginning second-grade level, but very difficult at beginning third-grade level. (Instructional Zone: 2.0 to 3.1)

Appropriate instructional materials for Shawn in mathematics would range from beginning fifth-grade level (easy) to mid-sixth grade level (difficult).



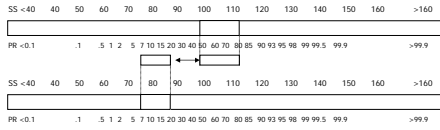
WJ

Standard Score/Percentile Rank Profiles

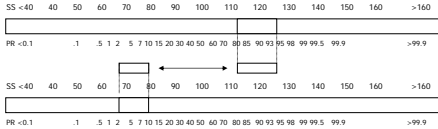
- Range of scores that contain subject's true score at a 68% level of confidence (+/- 1 SEM)
- Evaluate significance of difference between any 2 tests of clusters (statistical probability statements)

If confidence bands overlap, assume no significant difference exists.

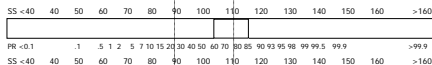
If separation between bands is less than the width of the wider band, assume a possible significant difference exists.



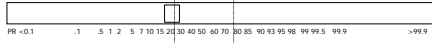
If separation between bands is greater than the width of the wider band, assume a significant difference exists.



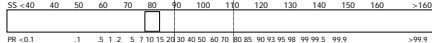
Oral Lang.



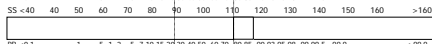
Total ACH



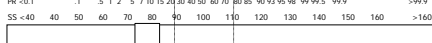
B. Reading



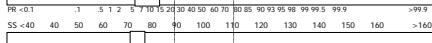
B. Math



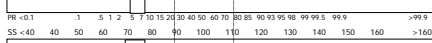
B. W. Lang.



Basic RS



Basic WS



Average

Sample WJ III ACH Paragraph

On the WJ III ACH Broad Reading cluster, Kasey obtained a standard score of 66 ($\pm 1\text{SEM} = 63-69$). When Kasey's actual standard score in Broad Reading is compared to his predicted score (based on the average of the other three areas of achievement), only 1 out of 1,000 people would obtain a score the same or lower. His Relative Proficiency Index of 4/90 indicates that when average grade-mates are having 90% success, Kasey will have approximately 4% success, performance well below the frustration level.

His grade scores on the Instructional Zone indicate that an easy level of reading for Kasey is mid-first grade, whereas a frustration level is beginning second grade. Although all reading scores were in the Low to Low Average range, Kasey's score on the Reading Fluency test, which requires rapid reading of simple sentences, was significantly lower than his scores on the Letter-Word Identification and Passage Comprehension tests. In general, many of Kasey's reading errors involved medial vowel sounds, such as pronouncing *must* as "mist." Even when accurate, his word recognition was slow. Kasey appeared to lack confidence in his reading ability, and he remarked during testing that reading has been difficult for him since first grade. (Mather & Jaffe, 2002).

Concern

Looking only at quantitative information (test scores) and ignoring critical qualitative information (e.g., behavioral observations and work samples)

Strengths

- Language
- Imagination and Creativity
- Reading
- Drawing

End of Part 1: WJ III Administration
and Scoring

Part 2: WJ III Interpretation
September 13, 2006
2:00 Eastern Standard Time

