Introduction to the WPPSI III

Dr. Donna Rury Smith
Clinical Measurement Consultant
PsychCorp

Revision Goals

- Update and Strengthen Theoretical Foundations
- Increase Developmental Appropriateness
- Enhance Clinical Utility
- Improve Psychometric Properties
- Increase and Enhance User-Friendliness

Update Theoretical Foundations

- Use of Factor-Based Composite Scores
- Enhance the Measure of Fluid Reasoning
- Incorporate Measures of Processing Speed
- Incorporate Alternative Measures of Memory

Strengthen Theoretical Foundations

- Use of Factor Index Scores
  - Multiple factors in cognitive ability
  - Consistent with WISC-III and WAIS-III
- Enhanced Measure of Fluid Reasoning
  - Tasks that involve ‘manipulating abstractions, rules, generalizations, and logical relationships’ require fluid intelligence (Carroll, 1993, p. 583).
  - MR, Picture Concepts, and Word Reasoning developed to enhance the measure of fluid intelligence

Strengthen Theoretical Foundations

- Incorporate Measures of Processing Speed
  - Important domain of cognitive functioning
  - Predicts future scores on measures of intelligence (Dougherty & Haith, 1997; Schatz, et.al., 2000; Kail, 2000)
  - Sensitive to neurological conditions
  - Dynamically related to working memory and reasoning (Carpenter, et.al., 1990; Fry & Hale, 1996; Kail & Salthouse, 1994)

Increase Developmental Appropriateness

- Create the Age Bands
- Simplify instructions to the child
- Increase teaching, queries and prompts
- Revise scoring criteria
- Reduce the confounding effects of speeded performance
- Reduce the confounding effects of expressive language development
- Update and modernize test materials
Enhance Clinical Utility

- Extension of age range
  - 2 years 6 months to 7 years 3 months
- Additional clinical studies
  - mental retardation, cognitive giftedness, developmental delay, at-risk, language disorder, ADHD, and reading delay.
- Additional validity studies
  - Relationships to other measures: WISC–III, Bayley, DAS, CMS, and WIAT-II.

Improve Psychometric Properties

- Updating of norms
- Expand on evidence of reliability and validity
- Extend floors and ceilings
- Re-examine item bias

Increase User-Friendliness

- Decrease testing time
- Simplify administration and scoring procedures
- Eliminate the Object Assembly shield
- Divide and reorganize the manual
- Divide and reorganize the record form

WPPSI-III Organization

- Ages 2:06 to 3:11
- 4 Core Subtests
  - 25-35 minutes
  - Picture Naming (can substitute for RV)
  - Receptive Vocabulary
  - Information
  - Vocabulary
  - Word Reasoning
  - Block Design
  - Matrix Reasoning
  - Picture Concepts
- VIQ
- PIQ
- FSIQ
- Optional Scores
- General Language Composite (PN + RV)

Subtest Modifications

- 5 Subtests Dropped
  - Arithmetic, Animal Pegs, Geometric Design, Sentences, and Mazes dropped
- 7 Subtests Retained with Modifications
  - Modifications to Verbal Subtests (IN, SI, VC, CO)
  - Modifications to Performance Subtests (BD, OA, PC)
- 7 New Subtests Developed
  - New Verbal Subtests: PN, RV, and WR
  - New Performance Subtests: MR, PCO, SS, CD
Content and Rationale of New Verbal Subtests

- **Picture Naming**: The child names pictures that are displayed singularly in the stimulus booklet. This subtest is designed to measure expressive vocabulary ability.
- **Receptive Vocabulary**: The child looks at a group of four pictures and points to the one the examiner describes aloud. This subtest is designed to assess receptive vocabulary ability.
- **Word Reasoning**: The child is read an increasingly specific series of one to three clues and identifies the common object or concept being described. This subtest is designed to measure fluid reasoning (inductive reasoning) ability.

Content and Rationale of New Performance Subtests

- **Matrix Reasoning**: The child looks at an incomplete matrix and selects the missing section from 4 or 5 response options. This subtest is designed to assess non-verbal fluid reasoning ability.
- **Picture Concepts**: The child is presented with 2 or 3 rows of pictures and chooses one picture from each row to form a group with a common organizational concept. This subtest is designed to measure non-verbal fluid reasoning ability and abstract categorical reasoning with visual stimuli.

Content and Rationale of New Processing Speed Subtests

- **Symbol Search**: The child scans a target symbol and a search group and indicates whether the target symbol matches a symbol in the search group. This subtest is designed to measure perceptual discrimination and visuoperceptual processing speed and accuracy.
- **Coding**: Using a key, the child copies symbols into simple geometric shapes. This subtest is designed to measure visual-motor processing speed and short-term memory of visual stimuli.

Subtest Modifications to WPPSI-III

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Start Points

Administration of each subtest begins at the age-specific start point, which is clearly designated in the Manual and on the Record Form.

Children aged 2:6 – 3:11 begin each subtest, excluding Sample items, with Item 1.

Children suspected of intellectual deficiency should always begin with Item 1, regardless of chronological age.

Regardless of the child’s performance on items preceding the start point, full credit is awarded if perfect scores are obtained on the age-appropriate start point and subsequent item.
### Reverse Rules

The reverse rule applies to those subtests with age-specific start points. Items prior to an age-appropriate start point are considered reversal items.

If the child does not obtain a perfect score on either the first or second item administered, then reversal items are given in reverse sequence until the child obtains a perfect score on two consecutive items.

### Discontinue Rules

These rules are subtest specific and are stated at the beginning of each subtest. Scores obtained on items administered in reverse sequence count in the discontinue rules.

If you are unsure how to score an item, administer additional items until you are sure that the discontinue rule has been met.

### Timing

Block Design, Symbol Search, Coding, and Picture Completion require accurate timing with a stopwatch.

Begin timing after you have said the last word of instructions.

If item instructions are repeated upon request, do not stop timing in order to clarify or repeat instructions.

### Queries, Prompts, and Item Repetition

In general the use of queries, prompts, and repetitions is generally unrestricted.

Items with queries for specific responses are noted with an asterisk (*) in the Manual and on the Record Form. A query should not be used to improve a low-scoring or clearly incorrect response, unless specifically instructed to do so in the item instructions.

### Bonus Points

No bonus points are given for quick performance on Block Design or Object Assembly items.

Time bonuses are available only for Coding, which is a direct measure of processing speed.
Prompts are used to teach or remind the child of the subtest task. For example, if a child chooses more than one picture from a single row on the Picture Concepts subtest, you can remind him to pick only one.

Instructions for prompting are included in the General Directions section of the Manual for each subtest.

Using Sample Responses

Score 2 points for a response that is equivalent to or better than the 2-point sample responses and 0 points for any response that is equivalent or inferior to the 0-point response. Award 1 point for any response that is equivalent in quality to the 1-point sample responses.

Item Repetition should be provided as often as requested on any subtest except the Word Reasoning subtest.

If a child responds “I don’t know” to an items but then correctly responds to more difficult items on the same subtest, re-administer the earlier item if you believe the child knows the answer. Provide credit if the response is correct.

Block Design

- 20 items – divided into two parts
  - Part B – 10 items using single and two-colored blocks.
  - 10 new items designed to improve floor, ceiling, and item difficulty gradient. Timed, but no time bonuses.

Designed to measure the ability to analyze and synthesize abstract visual stimuli and nonverbal concept formation.

Also involves visual perception and organization, visual-motor coordination, spatial visualization, learning, and the ability to separate figure and ground in visual stimuli.

Administration

- Items 1-12 are presented as a model you construct for the child. Leave the model intact after you build it.
- Item 13 is first presented as a model you construct from the pictured design in Stimulus Book 1. The model is then disassembled, and the child constructs the design according to the presented picture.
- Items 14-20 are presented to the child as a picture in the Stimulus Book.
Administration

- When demonstrating the construction of a design, always explain the construction aloud.
- After you construct the model, move the intact model about 7 inches from the child’s edge of the table. (slightly to the left for a right-handed child; slightly to the right for a left-handed child)

Information

- 34 items
  - 6 picture items – all new
  - 28 verbal items – 19 retained from WPPSI-R. Some scoring modifications.

Definitions of Fluid Reasoning

It is the “ability to perform mental operations, such as the manipulation of abstract symbols” Sternberg, 1995

It is Gf from the Horn–Catell model Catell, 1941; Horn, 1968

It encompasses the abilities of reasoning under novel conditions: general reasoning, figural relations, semantic relations, classifications, concept formation. Horn & Noll, 1997

Matrix Reasoning

- 29 items – child completes matrices from four and five response options.
### Matrix Reasoning
- Measure of fluid intelligence and a reliable estimate of general intellectual ability.
- Also reflects visual information processing, abstract reasoning skills, continuous and discrete pattern completion, classification, analogical reasoning, and serial reasoning.

### Administration
- It is essential to clarify the instructions by pointing to the responses and the box with the question mark as you speak to the child.
- Use the sample items to provide feedback RE a correct or incorrect response.

### Vocabulary
- **25 items**
  - 5 picture items – designed to extend the floor of the subtest.
  - 20 verbal items – 4 new items to improve item difficulty gradient. Scoring modifications on all items.

**“What is a shoe?”**

### Vocabulary
- Designed to assess a child’s word knowledge and verbal concept formation. Also designed to measure a child’s fund of knowledge, learning ability, long-term memory, and degree of language development.
- Other abilities that may be utilized include auditory perception and comprehension, verbal conceptualization, abstract thinking, and verbal expression.

### Administration
- There are 4 general response situations that require further query:
  - marginal responses
  - generalized responses
  - functional responses
  - hand gestures
- Query as often as necessary

### Picture Concepts
- 28 items – Child chooses one picture from each row to form a group with a common organizational concept.
Picture Concepts

- Designed to measure abstract, categorical reasoning ability.
- Solutions to easier items are generally attained by reasoning based on concrete representations, and the solutions to more difficult items are obtained by reasoning based on more abstract representations.

Picture Concepts

- Provide help on Sample A and B only.
- The child may point to, name, or state the corresponding numbers of the chosen pictures.
- If the child asks the name of a picture, provide the name only.
- Can provide prompts as often as necessary.

Symbol Search

- 120 seconds to complete
- Ages 4:0 – 7:3

Symbol Search

- Designed to measure processing speed.
- Also involves short-term visual memory, visual-motor coordination, cognitive flexibility, visual discrimination, and concentration.
- May also tap perceptual organization, and planning and learning ability.

Administration

- Accurate timing is essential. Begin timing after you have said the last word of the instructions. Stop timing when the child completes all the items or after 120 seconds have elapsed.
- Use the sample items to explain and demonstrate the task. You can repeat the explanation and demonstrate the task a second time if the child does not understand or seems confused. Then allow the child to complete the Practice Items.

Administration

- Do not proceed with the actual test items if the child does not understand the task. Discontinue the subtest.
- If the child makes an error on the practice items, correct the error immediately.
- Do not provide an eraser.
**Administration**

- If the child skips a row, point to the omitted row and say, *Do them in order. Don’t skip any.*
- You can remind the child to continue until told to stop if necessary.

**Administration**

- Use the Symbol Search scoring key to check responses. Mark a correct response with a +, incorrect with a -.
- If the total score is equal to or less than 0, enter 0 as the subtest total raw score.
- Skipped items should not be counted in the correct or incorrect total.

**Word Reasoning**

- **28 items** – Examiner reads increasingly specific series of one to three clues and the child is asked to identify the common concept being described in a series of clues.

**Word Reasoning**

- Measures verbal deductive reasoning.
- Skills that contribute to success include verbal comprehension, analogical and general reasoning ability, the ability to integrate and synthesize different types of information, verbal abstraction, domain knowledge, the ability to generate alternative concepts.

**Administration**

- Clues for all items appear on the Record Form.
- Allow the child approximately 5 seconds to respond after each clue.
- You may repeat each clue **one time only**. The repetition can be provided at the child’s request or after a 5-second delay in responding. Allow an additional 5 seconds for a response, then move on to the next clue.

**Administration**

- If the child provides the correct response before all clues have been presented, score 1 point, and proceed to the next item. If the child does not provide a correct response, present the next clue or item as appropriate.
- Synonyms and specific name brands or objects also receive credit.
Administration

- If you notice a left-handed child partially blocking the key with his hand while completing the task, place an extra Response Booklet to the right of the child’s Response Booklet so the extra key is aligned with the one that the child’s hand is blocking.
- Do not provide an eraser. If the child asks what he should do if he makes a mistake, say, ‘That’s OK. Just keep working as fast as you can.’

Coding

- If a child omits an item, point to the omitted item and say, ‘Do them in order. Don’t skip any.’
- You may remind the child to continue until told to stop if necessary.
- Use the Coding Scoring Key to check responses. A symbol receives credit if it is correctly drawn or if it is clearly identifiable as the keyed symbol.

Administration

- Time bonuses are awarded for perfect performance when completion time is 115 seconds or less. (see Record Form)
- Teach the task by modeling and talking through responses for the first 2 shapes (circle and star).
- Then allow the child to practice the remaining sample items. If the child makes a mistake, correct the error immediately.

Comprehension

- 20 items – all items require the child to answer questions.
- 15 new items and 5 items retained.

Administration

- Do not proceed with the test items until the child understands the task. If it is clear that the child will not be able to understand the task with further instruction, discontinue the subtest.

Comprehension

- Designed to assess verbal reasoning and conceptualization, the ability to evaluate and utilize past experiences, verbal comprehension and expression, and the ability to demonstrate practical information.
- Also involves knowledge of conventional standards of behavior, social judgment and maturity, and common sense.
Administration

- Read each question slowly to the child. You may repeat a question as often as necessary, but do not alter or abbreviate the wording.
- If a child does not provide a 1-point response on either Item 1 or Item 2, provide the 1-point response as instructed for these items.
- Unclear or too vague responses should be queried. Always note with (Q) on the Record Form. If an improved (correct) response is offered after the query, score the improved response accordingly.

Administration

- The sample responses in the Manual are not an exhaustive list. Evaluate unusual responses carefully and refer to the General Scoring Principle. The principle is stated after each item in the Manual.
- Items 1 and 2 are scored 1 or 0.
- Items 3 – 20 are scores 2, 1, or 0.

Picture Completion

- 32 items – all artwork has been redrawn, enlarged and colorized.
- 20 items retained, 12 new items to improve difficulty gradient.
- Designed to measure visual perception and organization, concentration, and visual recognition of essential details of objects.

Administration

- Accurate timing is essential. The time limit for each item is 20 seconds. Begin timing after presenting the item and saying the last word of the instructions.
- Provide the stated queries (page 149 in Manual) as often as necessary.
- Examples of verbal responses that also require the child to point correctly in order to earn 1 point are listed on pages 153-156 in the Manual.

Administration

- Synonyms for the missing part are awarded 1 point.
- If a child points to the correct place in the picture but gives a verbal elaboration that spoils the response, score 0 points.
- Score 1 point if the child correctly identifies the missing part within 20 seconds. Score 0 if he does not respond within the time limit.

Similarities

- Supplemental Subtest for Ages 4:0 to 7:3
- 24 items – only includes sentence completion.
  - 16 new items – Scoring criteria modified.
**Similarities**

- Designed to measure verbal reasoning and concept formation.
- Also involves auditory comprehension, memory, distinguishing non-essential and essential features, and verbal expression.

**Administration**

- Each item may be repeated as often as necessary, but do not alter the wording in any way.
- Signal the missing portion of the sentence by emphasizing the word *both*.
- Responses that require a query are noted in the sample responses. Use the total response for scoring.

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**Administration**

- Items 1 and 2 are designed as teaching items, and each has 2 trials. Corrective feedback is provided if the child provides an incorrect response or a response without the target word. Award full credit if the child provides a 1-point response on either Trail 1 or 2.
- Use the General Scoring Principles to aware 2, 1, or 0 points.

**Receptive Vocabulary**

- Core for 2:06 – 3:11; Optional for 4:00 – 7:03.
- 30 items – Child names a displayed picture.

**Receptive Vocabulary**

- Designed to assess the ability to comprehend verbal directives, auditory and visual discrimination, auditory memory, auditory processing, and the integration of visual perception and auditory input.
- Also involves minimal motor or verbal responding.

**Administration**

- Allow approximately 30 seconds for a response, then move on to the next item. Score the item as 0.
- Provide a correct response on Item 1 if the child does not provide one.
- You may repeat an item as often as necessary.
Object Assembly

- Designed to assess visual-perceptual organization, integration and synthesis of part-whole relationships, nonverbal reasoning, and trial and error learning.
- Also involves spatial ability, visual-motor coordination, cognitive flexibility, and persistence.

Administration

- Make sure that you and the child are seated directly opposite from each other.
- Before beginning an item, sequentially sort the puzzle pieces in your hand out of the child's view. Stack the pieces face-down in sequential order, starting with the highest-numbered piece and ending with the piece numbered 1.

Administration

- Working from your left to right, place the pieces in sequential order, with the number side visible and the numbers upright from your perspective. The underlines beneath the numbers should be parallel to the edge of the table. Place the pieces with 1 underline in the first row, closest to the child. Place those with double underlines in the next row, closest to you.
- When properly aligned, an imaginary line can be drawn through the underlines on the back of each piece in the row.

Administration

- Begin timing after saying the last word of instructions.
- You can allow the child a few additional seconds to complete an item if he is nearing completion when the time expires. Credit is awarded only for junctures that were correctly joined at the end of the time limit.

Administration

- If the child turns a puzzle piece over during the task, unobtrusively turn the piece right-side up again.
- You may remind the child to work as fast as you can if he is off task.
- Remove the puzzle pieces from the child's view at the completion of each puzzle before presenting the next item.
Administration

- Record the completion time in seconds for each item.
- A juncture is the place where 2 adjacent pieces meet. Two pieces are considered correctly joined even when they are formed in isolation and not integrated with other puzzle pieces.
- Pictures of junctures are in Figure 3.12 in the Manual.

Administration

- Children are not penalized for gaps and/or misalignments between adjacent pieces less than or equal to ¼ inch.
- For Items 1 and 2 (where there are 2 trials), enter 1 point if junctures are correctly joined or either Trial 1 or 2.
- For Items 13 and 14, the score is the number of junctures correctly joined multiplied by ½. Scores are rounded up.

Picture Naming

- Supplemental verbal subtest for 2:6 – 3:11, and Optional for 4:0 – 7:3
- 30 items – Child names the picture displayed.

Picture Naming

- Designed to assess expressive language ability, word-finding skills, word retrieval from long-term memory, and association of visual stimuli with language.

Administration

- Children receive credit if it is apparent that they know the correct name of an object, despite their inability to pronounce the name correctly.
- Item 9 requires a specific response (toothpaste) that requires additional query.
- Follow the 4 general response situations (in Manual) that require further query.
- Personalized responses (I have one) are scored 0.

For Ages 6:0 – 7:3

Use WPPSI III instead of WISC III/IV:
- When you suspect below-average cognitive ability
- With child with limited English proficiency, language impairment, or verbal/expressive difficulties
Use WISC III for a child of high ability.
### For Ages 2:6 – 3:11

**Use Bayley Scales of Infant Development instead of WPPSI III:**
- When you suspect below-average cognitive ability

**Use WPPSI III instead of BSID:**
- When the young child has high abilities (e.g., giftedness)

### Testing Children with Special Needs

- **Child with motor impairments:**
  - consider giving only the Verbal subtests and those Performance subtests that require simple or no motor skills (e.g., Picture Concepts and Matrix Reasoning)
  - Symbol Search may be substituted for Coding in deriving the FSIQ

### Testing Children with Special Needs

- **Child with a language deficiency:**
  - consider placing more weight on the Performance subtests as estimates of the child’s cognitive abilities
  - Picture Naming and Receptive Vocabulary can be useful for older children suspected of having an expressive or other language delay because they rely less on oral expression

### Testing Children with Special Needs

- Any and all modifications from the standardized administration and scoring instructions (e.g., use of an interpreter, translation of items, prompts, non-standardized administration order, etc.) need to be documented on the protocol and included in the report.

### Reevaluations

- Practice effects on the Performance subtests are minimized after an interval of 1-2 years, and less than that for the Verbal subtests
- If a retest is necessary in a shorter time frame, supplemental subtests that were not used in the initial evaluation should be substituted for those administered in the initial evaluation

### Practice Effects

Test-retest results from standardization indicate that when the second testing was within a 2-7 week time interval, Performance IQ scores increased by 5.0 points on average for the overall sample.

Some increase in scores can also be attributed to the rapid development of cognitive abilities and language acquisition in very young children.
Evidence of Validity

- Evidence based on relationships with other variables
- Relationships to other measures
  - WPPSI-R
  - WISC-III
  - BSID-II
  - DAS
  - WIAT-II
  - CMS

Special Group Validity Studies

- Attention Deficit Disorder
- Aspergers/Autistic Spectrum Disorders
- Developmentally Delayed
- Expressive Language Disorder
- Gifted and Talented
- Limited English Proficiency
- Motor Impaired
- Mentally Retarded
- Receptive/Expressive Language Disorder
- Risk Children (At-Risk Children)

Profile Analysis

1. Report and Describe the FSIQ
2. Report and Describe the VIQ
3. Report and Describe the PIQ
4. Report and Describe the PSQ
5. Report and Describe the GLC
6. Perform Pairwise Comparisons of the VIQ, PIQ, and PSQ
7. Determine Strengths and Weaknesses

Profile Analysis

8. Perform Pairwise Comparisons of Selected Subtest Scaled Scores
9. Evaluate the Pattern of Scores Within Subtests
10. Qualitative Analysis of Individual Responses

For more information:

Donna Rury Smith, Ed.D.
Clinical Measurement Consultant
The Psychological Corporation
2817 Berry Trace
Schertz, TX 78154
Phone: (210) 566-6812
Fax: (210) 566-0891
Email: donna_smith@harcourt.com
URL: http://www.PsychCorp.com

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