
Test Review

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Wechsler Individual Achievement Test—Third Edition.

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Test Description

The *Wechsler Individual Achievement Test—Third Edition* (WIAT-III), published by Pearson, is a newly updated individual measure of academic achievement for students in Pre-Kindergarten through Grade 12 (age 4 years, 0 months to 19 years, 11 months). Suitable for use in educational, clinical, and research settings, the stated purposes of the WIAT-III are to identify student academic strengths and weaknesses, inform special education eligibility and/or placement decisions, inform the diagnosis of specific learning disabilities, and to aid in the design of instructional objectives and interventions.

The WIAT-III is classified as a Level B measure, and may be administered and interpreted by psychologists and nonpsychologists who have undergone formal training in standardized psychological or educational testing. Administration time varies from approximately 30 to 145 min according to the student's grade level, academic performance, test-taking ability, and behaviour during testing. Standard scores and percentiles are provided for both subtests and composites, as are age and grade equivalents. Scoring parameters for each subtest are provided in the Examiner's Manual.

The WIAT-III kit is comprised of an Examiner's Manual, Technical Manual CD, Stimulus Book, Record Form, Response Booklet, Oral Reading Fluency Booklet, Word Card, Pseudoword Card, Scoring Workbook, Audio CD, and Scoring Assistant software. The Examiner's Manual is effectively laid out, beginning with an overview of the WIAT-III and general testing guidelines. Following this, the manual provides detailed information pertaining to the administration and scoring of each subtest. Finally, the manual concludes with a section on analysis and interpretation of the measure. The stimulus book contains double-sided pages, eliminating the need for a second book as in the WIAT-II.

Table 1. WIAT-III Composites and Subtests

	Oral Language (pre-K-12)	Total Reading (Grades 1-12)	Basic Reading (Grades 1-12)	Reading comprehension and fluency (Grades 2-12)	Written expression (K-12)	Math (K-12)	Math Fluency (Grades 1-12)
Listening Comprehension	X						
Oral Expression	X						
Early Reading Skills (pre-K-3)			Does not contribute to composite score				
Word Reading		X	X				
Pseudoword Decoding		X	X				
Reading Comprehension		X		X			
Oral Reading Fluency		X		X			
Alphabet Writing Fluency (K-2)					X		
Spelling					X		
Sentence Composition					X		
Essay Composition (Grades 3-12)					X		
Math Problem Solving						X	
Numerical Operations						X	
Math Fluency—Addition							X
Math Fluency—Subtraction							X
Math Fluency—Multiplication (Grades 3-12)							X

Subtest Description and Scoring

The WIAT-III includes 16 subtests; however, examiners can choose to administer individual subtests, a selection of subtests, or all subtests, depending on the grade level or the presenting difficulties of the examinee. These subtests combine to form seven composites: Oral Language, Total Reading, Basic Reading, Reading Comprehension and Fluency, Written Expression, Mathematics, Math Fluency, and a Total Achievement Score. It should be noted that four of the subtests (Early Reading Skills, Alphabet Writing Fluency, Oral Reading Fluency, and Spelling) that contribute to the Total Achievement Score do not contribute to the composites at every grade level. See Table 1.

The WIAT-III makes use of separate start points, reverse rules, discontinue rules, and stop points for the majority of subtests to shorten administration time and avoid examinee fatigue and frustration. As well, certain subtests have specified time limits. The administration rules for each of these appear in the Record Form at the top of the page for each subtest. Also in the Record Form is a standardized introduction to the measure.

Total Reading, Basic Reading, and Reading Comprehension and Fluency Domains

Within the broad area of reading, the WIAT-III incorporates three composite scores: Total Reading, Basic Reading, and Reading Comprehension and Fluency. Basic Reading is comprised of Word Reading and Pseudoword Decoding while Reading Comprehension and Fluency incorporates Reading Comprehension and Oral Reading Fluency. These four subtests together form the Total Reading score.

In Word Reading, examinees are presented the Word Card and asked to begin reading from a specified start point. The examinee is timed, and the item number completed after 30s have elapsed is noted in the Record Form. As such, this subtest measures the speed and accuracy of single word reading.

Pseudoword Decoding evaluates speed and accuracy of reading decoding skills. Examinees are asked to read from the Pseudoword Card that contains a list of single nonwords derived from English-consistent morphemes. As with Word Reading, the examinee is timed, and the item number completed after 30s have elapsed is noted in the Record Form as the Pseudoword Decoding Speed score. Accuracy is recorded as the total number of correct items. The Audio CD contains specific pronunciations of each word that are to receive credit for this subtest and Word Reading.

Reading Comprehension measures literal and inferential skills with written material. The examinee is required to read passages, listen to questions posed by the examiner, and orally answer each question. Each response can receive a score ranging from 0 (*incorrect*) to 2 (*most correct*), depending on the item. This subtest makes use of specific blocks of items for individual grades that typically cover items with a range of difficulty from below to above the target grade level. Consequently, this subtest also contains a specific reverse rule should examinees not provide a correct response to any item corresponding to the initial passage. In such circumstances, examiners are directed to administer the items corresponding to the previous start point. This process may occur up to a total of three times (e.g., a child in Grade 5 could reverse back to items corresponding to Grade 2).

Oral Reading Fluency evaluates speed and fluency of oral reading. Examinees are required to read sets of passages, specific to an individual's grade, contained in the Oral Reading Fluency Booklet. Time limits are specified for each item beginning with Passage C, which is the start point for Grade 2. If the examinee is unable to read the passage within the time limit, examiners are instructed to reverse back one start point, up to a maximum of two start points. This subtest yields scores for Oral Reading Accuracy (number of correctly read words), Oral Reading Rate (total elapsed reading time), and Oral Reading Fluency (number words correctly read divided by elapsed time).

In addition, for early readers, an Early Reading Skills subtest is also administered. Early Reading Skills examines skills important for the development of reading ability and is administered to children in Grades Pre-Kindergarten to 3. For example, identification of individual letters, knowledge of graphemes, rhymes, and beginning and ending sounds of words. Stimuli for this subtest appear in the Stimulus Book and specific questions for each item appear in the Record Form. The examinee is required to respond either orally (indicated by [O] on the Record form) or by pointing (indicated by [P] in the Record Form).

Mathematics and Math Fluency Domains

Within the broad mathematics domain are two composite scores: Mathematics and Math Fluency. Mathematics is comprised of the Math Problem Solving and Numerical Operations subtests while Math Fluency includes the three fluency subtests (Addition, Subtraction, and Multiplication).

Math Problem Solving requires the examinee to listen to math problems read aloud by the examiner, look at corresponding visual stimuli, and provide oral or pointing responses. The examinee is provided paper and pencil so that the task is more purely a measure of math knowledge rather than of working memory.

Numerical Operations evaluates mathematical calculation skills. Examinees are asked to complete questions in the Response Booklet, containing tasks of simple counting, arithmetic, algebra, geometry, trigonometry, and calculus. The score is derived from the total correct items.

Math Fluency measures mathematical calculation fluency and consists of Addition, Subtraction, and Multiplication tasks. Examinees are provided the Response Booklet, which contains two pages of simple calculations per task (for a total of six pages). Examinees are to solve the problems, with a 60s time limit per task. Examinees in Grades 1 and 2 only complete the Addition and Subtraction tasks.

Written Expression Domain

The Written Expression domain is completed by examinees in Kindergarten to Grade 12+. Younger students (K-2) complete Alphabet Writing Fluency, Sentence Composition, and Spelling, while older students (Grades 3-12+) complete Sentence Composition, Essay Composition, and Spelling.

Alphabet Writing Fluency evaluates an examinee's ability to write the letters of the alphabet within a 30s time limit. Responses can be upper or lower case, and in print or cursive form, with each correct letter receiving credit.

Sentence Composition consists of the Sentence Combining and Sentence Building tasks and evaluates sentence formulation skills, including the mechanics of writing (e.g., morphology, syntax, semantics, spelling, and punctuation). Sentence Combining requires the examinee to follow along as two or three sentences are read (depending on the item's level of difficulty), and then combine them into one cohesive sentence that includes all essential information from the target sentences. Sentence Building requires

the examinee to follow along as a target word is read aloud and then compose an appropriate complete sentence containing the target word.

Essay Composition evaluates spontaneous written expression in response to a prompt in examinees in Grades 3 to 12+. The examinee is required to listen as the examiner reads an essay prompt and then is required to plan and execute an essay within a 10 minute time limit. The final product is scored for Content and Organization (word count and theme development) as well as grammar and mechanics of writing. A specific scoring rubric is provided and examples of scoring are provided in the Appendices of the Examiner's Manual.

Spelling measures the ability to correctly spell individual words from dictation. Examinees are required to spell a word after listening to a target word, hearing the word in context within a sentence, and then listening to the word a second time.

Oral Language Domain

Within this domain, there are two subtests administered to all examinees. Listening Comprehension measures listening comprehension at the word, sentence, and discourse level. This subtest consists of Receptive Vocabulary and Oral Discourse Comprehension tasks. Listening Comprehension requires the examinee to view a page with four pictures, listen to a word spoken by the examiner, and indicate which picture corresponds best to the target word. Oral Discourse Comprehension requires the examinee to listen to one or more sentences of expository information (provided on the Audio CD or read by the examiner), and then answer questions pertaining to the information. Each item for both tasks, as with the majority of subtests in the WIAT-III, is scored as either 1 (*correct*) or 0 (*incorrect*). For this subtest, as with all subsequent subtests, correct answers are indicated in the Record Form.

Second, Oral Expression measures skills important for effective oral expression and language skills, and consists of the Expressive Vocabulary, Oral Word Fluency, and Sentence Repetition tasks. Expressive Vocabulary is a task of spoken vocabulary and requires the examinee to view a picture in the Stimulus Book and respond to a posed question pertaining to that stimulus. Oral Word Fluency is a task of word retrieval skills and requires examinees to name as many items consistent with a provided conceptual category within a 60s limit. Finally, Sentence Repetition is a task of oral syntactic knowledge and working memory that requires the examinee to listen to and repeat orally presented sentences verbatim. This task necessitates a specific scoring procedure that is described in detail in the appendix of the Examiner's Manual.

Technical Adequacy

Development and Standardization

Development of the WIAT-III, much like other Wechsler measures, incorporated a number of stages: conceptual development, pilot testing, national tryouts, standardization, and final assembly and evaluation. During initial stages, feedback on the WIAT-II

was sought from a number of Canadian and American sources (e.g., consultation with Pearson representatives, market research with practitioners, advisory panels, surveys of experts and examiners). Pilot studies and a larger National Tryout were conducted using a research version of the WIAT-III and allowed for the opportunity to gain clarity on administration and technical issues (e.g., appropriate floor and ceiling limits, scoring criteria, administration rules, etc.) as well as incorporation of special populations. Additional consideration was given to some specific items to ensure that questions reflected Canadian spelling, units of measurement, currency, and curriculum content (e.g., history, geography, etc.).

Canadian standardization of the WIAT-III took place during the spring of 2009. Data were collected in alignment with the Statistics Canada census data from 2006. Consideration was given to participants' age, grade, sex, race/ethnicity, parental education level, and geographic region. In total, 822 typically developing students in Pre-Kindergarten to Grade 12 were included in the standardization sample. No special population samples were obtained in Canada; instead, data from the American standardization sample was used.

Reliability

Internal consistency. Internal consistency scores were calculated using split-half reliability for subtests with individual items. For subtests that do not have item-level responses (e.g., Alphabet Writing Fluency, Sentence Composition, Essay Composition, Oral Expression, Oral Reading Fluency) or are timed tasks (e.g., Alphabet Writing Fluency, Math Fluency), split-half reliability is not an appropriate method for examining reliability. Consequently, test-retest stability coefficients were used. All subtest reliability coefficients fell between .83 and .97 (*very good to excellent*), with the exception of Alphabet Writing Fluency (.69). This lower coefficient on Alphabet Writing Fluency may be due to the restricted range of possible scores on this timed task. All composite scores had excellent reliability, with scores ranging from .90 to .98.

Test-retest reliability. The Canadian standardization of the WIAT-III did not specifically include a test-retest reliability phase. Therefore, the technical manual reports reliability coefficients found during the American standardization study only. Test-retest reliability was computed using Pearson's product-moment correlation. Two grade bands were examined: PreK to Grade 5 and Grades 6 to 12. Adequate test-retest reliability was found for both grade bands across both subtest and composite scores. Fourteen of 16 subtests demonstrated reliability scores between .82 and .94 (*average to excellent* range), with Listening Comprehension and Sentence Composition scoring in the adequate range (.75 and .79 respectively). Composite score coefficients ranged from .87 to .96 (*good to excellent*).

Interrater reliability. As most scoring on the WIAT-III is objective (e.g., either *correct* or *incorrect*), interrater agreement was found to be very high (98%-99%). For subtests in which some subjectivity in scoring is possible (e.g., Reading Comprehension, Alphabet Writing Fluency, Sentence Composition, Essay Composition, some Oral

Expression questions), interrater reliability was also found to be excellent, with scores ranging from 91% to 99%.

Validity

Content validity. An extensive review of current literature and consultation with experts within the field was completed to ensure content validity in the WIAT-III. Specific focus was placed on examining wording and formatting of items as well as administration and scoring. The final items used in the WIAT-III aligned closely with the theoretical framework of the measure and adequately measure the intended constructs within each domain.

Internal structure. Intercorrelational studies examining the relationship between WIAT-III subtests were conducted. As expected, those subtests that fell within the same domain (e.g., Mathematics) had moderate to high correlations (.41 to .93). As well, correlations were as expected between related subtests within different domains (e.g., Spelling and Word Reading) as these skills are known to be related.

Relationship with other constructs. The relationship between the WIAT-III and the Wechsler Individual Achievement Test–Second Edition (WIAT-II; Wechsler, 2001), Wechsler Intelligence Scale for Children–Fourth Edition (WISC-IV; Wechsler, 2003), Wechsler Adult Intelligence Test–Fourth Edition (WAIS-IV; Wechsler, 2008), and Wechsler Memory Scale–Fourth Edition (WMS-IV; Wechsler, 2009) was examined. Correlations with the WIAT-II indicated that subtests that remained relatively consistent between editions had high correlations but, as expected, those subtests that underwent significant revision (e.g., Reading Comprehension, Written Expression) had lower correlation. Correlations with the WISC-IV, a primary measure of intellectual ability, were also acceptable, with all WIAT-III subtest correlations ranging between .41 and .76 when compared to the full scale score of the WISC-IV.

Commentary and Recommendations

The new and improved WIAT-III offers examiners more options and flexibility when assessing students. Although there are a significant number of improvements in the measure, some limitations are also noted.

Strengths

The strength of the WIAT-III clearly focuses on the inclusion of new subtests that greatly add to a practitioner's ability to better understand students and their academic strengths and weaknesses. In particular, gaining an understanding of an individual's academic fluency is extremely useful and an excellent addition. Indeed, both the Word Reading and Pseudoword Decoding subtests have been modified to include an aspect of decoding speed by indicating the item a student has reached after 30s have elapsed. This measure provides an indication of a student's ability to decode the individual

words in an automatic fashion. In addition, the Pseudoword Decoding subtest has been enhanced through the addition of a suggested notation system for recording errors. This system is described in the Examiner's Manual and affords examiners the opportunity to evaluate the specific nature of errors during this subtest.

Reading Comprehension has been modified to include a new reversal rule whereby students reverse only one start point at a time rather than three start points as in the WIAT-II. Moreover, the length of this subtest has been shortened and students are now required to complete only 3 passages per each grade-related item set. Given that this subtest can often result in significant difficulties for students challenged by the comprehension of written discourse, these modifications are likely to reduce test-taking stress and oppositional behaviours.

In addition, given that all administration instructions, ceiling and basal rules, and scoring guides are available within the test record form, there is significantly less "flipping" of books and pages. Having only one stimulus book greatly reduces the amount of materials that an examiner must carry with them. As well, although the technical manual is quite long (633 pages), it is presented in CD format, which allows for a reader to easily find the section that they are looking for (rather than having to search through pages) and greatly reduces the weight of the test kit. It is also beneficial to have scoring software included in every test kit, as this ensures that all users have access to computer scoring. This access may be particularly useful for psychologists who move between locations (e.g., between schools) and may not be based out of a single office, as they are able to score the WIAT-III on their own computers.

It is apparent that the WIAT-III is technically adequate and demonstrates strong reliability and validity. In addition, significant care and consideration was taken when creating Canadian-focused test questions and developers removed or modified any question thought to be specific to the United States.

Limitations

Despite the strengths in the new WIAT-III, there are also some drawbacks. With the addition of new subtests, the revised test is now longer than the previous edition. If an examiner wishes to administer all subtests, the WIAT-III may take upwards of 2 hr, depending on the examinee. This length of time is significant, especially if other tests are required (e.g., cognitive assessment). But at the same time, if such an extensive educational analysis is required, the WIAT-III provides a solid sampling of key and relevant areas.

While having most instructions and information in the test record form is useful, it has greatly increased the cost of these forms. According to the Pearson Canada web site, the WIAT-II record forms were sold for \$131.00 for 25 (\$5.24 each). The new WIAT-III record forms are considerably more expensive, selling for \$140.00 for 25 (\$5.60 each). This price increase is significant when considering that a practitioner may choose to only administer parts of the WIAT-III, yet still pays for an entire record form.

Conclusion

In summary, it is apparent that the WIAT-III is an improvement on the WIAT-II. The overall strength of this measure outweighs the few minor drawbacks and should provide practitioners with an exceptional tool for assessing and understanding achievement abilities.

References

- Statistics Canada (Producer/Distributor). (2006). *2006 Census populations: 20% sample database* [CD]. Ottawa, Ontario, Canada: Author.
- Wechsler D. (2001). *Wechsler Individual Achievement Test* (2nd ed.). San Antonio, TX: NCS Pearson.
- Wechsler, D. (2003). *Wechsler Intelligence Scale for Children* (4th ed.). San Antonio, TX: NCS Pearson.
- Wechsler, D. (2008). *Wechsler Adult Intelligence Scale* (4th ed.). San Antonio, TX: NCS Pearson.
- Wechsler, D. (2009). *Wechsler Memory Scale* (4th ed.). San Antonio, TX: NCS Pearson.