WJ WOODCOCK JOHNSON®

Development, Interpretation, and Application of the *W* Score and the Relative Proficiency Index

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The Woodcock-Johnson® V (WJ V™; *McGrew, Mather, LaForte, & Wendling, 2025) provides a wide variety of score options for interpreting an individual's test performance. Many of these scores, such as standard scores (SS), percentile ranks (PR), age equivalents (AE), and grade equivalents (GE), are provided by most other educational and psychological tests. However, the WJ V is unique in providing two metrics that report the quality of an individual's performance: the* W *score and the relative proficiency index (RPI). The W score is the foundational metric—the score on which all other WJ V scores are based—and is useful for measuring an individual's progress over time. The RPI is a measure of a person's proficiency in a skill, ability, or area of knowledge compared with average age- or grade-peers. Since the W score and the RPI are not available in most other assessments, many psychologists and diagnosticians may be unaware of the clinical utility of these metrics. This paper discusses the* W *score, the RPI, the interpretation of each metric, and its use.*

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The purpose of this paper is to familiarize users of the *Woodcock-Johnson® V* (WJ V™; McGrew, Mather, LaForte, & Wendling, 2025) with the development, interpretation, and application of the *W* score and the RPI. Specifically, this paper describes the levels of interpretive information available in the WJ V, the special characteristics and usefulness of the *W* scale, and how the RPI fits into the hierarchy of information used to interpret test results. In addition, the paper explains the differences between the RPI and peer-comparison scores and the usefulness of the RPI in clarifying diagnostic profiles and designing interventions. Finally, it describes considerations for using the RPI to describe results for children receiving special education services.

Levels of Interpretive Information

Four levels of interpretive information are available with the *Woodcock-Johnson V* (WJ V) batteries (McGrew, Mather, LaForte, & Wendling, 2025), including qualitative information, level of development, degree of proficiency, and relative standing in a group.

The four levels of test information are cumulative; that is, each level provides different information about a person's test performance, and each successive level builds on information from the previous level. Information from one level is not interchangeable with information from another. For example, standard scores cannot be used in place of age or grade equivalents, or vice versa. Consequently, to interpret and describe a person's performance completely, information from all four levels must be considered.

Table 1 describes the hierarchy of interpretive information available from the WJ V batteries.

Table 1.
Hierarchy of Interpretive Information Available From the WJ V Batteries

Level	Type of Information	Basis	Information and Scores	Uses
1	Qualitative (Criterion-Referenced)	Observations during testing and analysis of responses	Description of the examinee's reaction to the test situation Patterns of errors and correct responses within specific tasks Strategies (correct or incorrect) used to perform specific tasks Performance on finely defined skills at the item content level	• Consideration of the possible effects of the examinee's behavior on the obtained test scores • Prediction of the examinee's behavior and reactions in instructional situations • Analysis of the examinee's strengths, misunderstandings, and limitations regarding specific academic skills, procedures, knowledge, and cognitive abilities • Instructional recommendations for specific skills

Table 1. *(cont.)*
Hierarchy of Interpretive Information Available From the WJ V Batteries

Level	Type of Information	Basis	Information and Scores	Uses
2	Level of Development (Norm-Referenced)	Sum of item scores Age or grade level in the norming sample at which the average is the same as the examinee's score	Total test score (raw score) Test or cluster *W* score[1] Age equivalent (AE) Grade equivalent (GE)	• Reporting the examinee's general level of development in a skill, ability, or area of knowledge compared to others of the same age or in the same grade in the norming sample • Monitoring an examinee's progress within a specific skill or ability • Basis for initial recommendations regarding instructional level and materials • Basis for describing the implications of developmental strengths and weaknesses • Placement decisions based on a criterion of significantly advanced or delayed development
3	Proficiency (Criterion-Referenced)	Distance of the examinee's score on the *W* scale from an age or grade reference point	Quality of the examinee's performance on assessed skills and abilities compared to those of age or grade peers in the norming sample Test or cluster *W*-Difference score (*W* DIFF)[1] Relative proficiency index (RPI) Cognitive-academic language proficiency (CALP) level Instructional or developmental zone	• The examinee's degree of proficiency on tasks mastered by average age or grade peers • Developmental level at which typical tasks will be perceived as easy, mildly challenging, or very difficult by the examinee • Placement decisions based on a criterion of significantly strong or weak proficiency • Prediction of performance on a similar task
4	Relative Standing in a Group (Norm-Referenced)	Relative position (A transformation of a difference score, such as dividing it by the standard deviation of the reference group)	Rank order Standard score (SS)[1] Percentile rank (PR)	• Statement of the relative (ordinal) position of the examinee's score, based on the standard deviation, within the range of scores obtained by age or grade peers in the norming sample • Placement decisions based on a criterion of significantly high or low standing in a group

[1] Equal interval units; preferred metric for statistical analyses

Adapted from Mather, N., Wendling, B. J., Snader, E. H., & Jeantete, G. T. (2025). Examiner's Manual (Table 6-1, p. 2). *Woodcock-Johnson V.* Riverside Assessments, LLC.

Descriptions of Interpretive Levels

This section provides detailed information about the hierarchy of interpretive information available from the WJ V batteries.

Level 1: Qualitative Information

Qualitative information is obtained through observation and analysis—observation of an examinee's behavior during testing and analysis of the task demands, the examinee's responses (correct and incorrect) to test items, and the strategies the examinee used to generate those responses. This type of information is critical to understanding and interpreting the scores an examinee obtained. Often a description of an examinee's behaviors during the test and the strategies they used to obtain a particular score are as important as the information provided by the score itself. Qualitative analysis is one of the cornerstones of proper individualized assessment and is an integral part of interpreting and reporting test results.

Examples of qualitative information include:

- Behavior: If an individual is inattentive during the Numbers Reversed test, the score might underestimate their actual working memory ability.
- Response pattern: An individual who has numerous misspellings that do not approximate phonetic spellings on the Spelling test may have a specific weakness in phonological awareness and/or phonics.
- Compensatory strategy: An individual who obtains an adequate score on the Calculation test but uses repeated addition rather than multiplication indicates a lack of knowledge of math facts and possibly the multiplication algorithm.

Level 2: Level of Development

The second level of information contains scores that report the level of development in the skill, ability, or area of knowledge measured. Typically, total test scores (raw scores) are converted directly into age equivalents (AE) and grade equivalents (GE). In the WJ V, however, the raw score is converted into a *W* score, from which age and grade equivalents are derived.

Level 3: Proficiency

This level provides information about an examinee's proficiency in specific tasks when compared to age or grade peers. It provides criterion-referenced scores. Although proficiency scores may be the most useful of the four levels of test information, most other assessment measures do not provide proficiency scores. Level 3 information includes the relative proficiency index (RPI), instructional and developmental zones (which are derived from the RPI), and the cognitive-academic language proficiency (CALP) level.

Level 4: Relative Standing in a Group

Level 4 information includes peer-comparison scores, the most used scores in educational and clinical settings. These are norm-referenced scores, such as standard scores (SS) and percentile ranks (PR), that describe an examinee's relative standing, or rank order, compared to their age or grade peers. In contrast to Level 3 scores, Level 4 scores indicate ordinal position in a group (i.e., first, second, third), not the quality of the examinee's performance. The significance of this difference is discussed in the "Relative Proficiency Index" section of this document.

The *W* Scale

The unit of the *W* scale, the *W* score, is the foundational metric for all derived scores (e.g., standard scores, percentile ranks, relative proficiency indexes) available for the all the Woodcock-Johnson assessments (LaForte, Dailey, & McGrew, 2025). Developed by Richard Woodcock and Marshall Dahl (1971), the *W* scale is a mathematical transformation of the Rasch model of data analysis, which is based on item response theory. In modifying the parameters of the associated statistical software program, Woodcock and Dahl (1971) produced a measurement scale with special characteristics that have advantages for test developers and those who interpret test results.

This section describes these characteristics, the procedure for representing levels of ability and item difficulty on the *W* scale for each test and cluster in the WJ V assessments, and the utility of the *W* scale, both for reporting an individual's growth in a measured trait and for predicting their chances of success on a specific task at any difficulty level.

Characteristics of the *W* Scale

Particularly useful characteristics of the *W* scale include the following:

1. The *W* scale is an equal-interval scale. On an equal-interval scale, any given interval (e.g., 3 points) represents the same amount of difference (e.g., amount of growth) in the trait measured, regardless of where that interval is located along the scale or what is being measured. This characteristic allows comparison of differences in pairs of scores situated anywhere on the scale. A familiar example of an equal-interval scale is a ruler. An interval of 3 inches on a ruler represents the same difference in length between 1 and 4 inches as it does between 85 and 88 inches. Equal-interval scales are generally considered the most appropriate scales for statistical calculations.
2. *W* ability describes a person's ability level on a trait. *W* difficulty describes the difficulty level of an item. Both are represented on the same scale, allowing them to be used as factors within the same mathematical calculations.

Test Development Using the *W* Scale

W Difficulty and W Ability

The norming of each Woodcock-Johnson test is done in stages. Using the Rasch model of measurement, the initial stage is the *calibration* of the items. All items being considered for inclusion in a test are administered to a large group of respondents. The resulting data are entered into the Rasch program, which:

- Identifies any items that are a poor fit (i.e., do not match the assessment intention) and require omission or revision.
- Sorts the items by difficulty level. The more people who respond correctly to an item, the easier the item is. The fewer people who respond correctly, the more difficult the item is.
- Assigns a value to each item that represents the item's difficulty level. This item difficulty level, or *W* difficulty, is indicated by its relative position on the *W* scale. An item's *W* difficulty is determined by the age or grade of the group in which 50% of the respondents answered the item correctly. The older the group, the more difficult the item is. The *W* difficulty of an item determines its relative position on the *W* scale. Lower *W* difficulties are associated with easier items; higher *W* difficulties are associated with more difficult items.

- Generates a *W* score for every possible raw score for the test. Consequently, for any possible total test score (raw score) that a person might obtain, there is an associated *W* score that represents the person's ability level on the task being assessed. This *W* score is, then, the examinee's *W* ability.

The *W* scale for each test is centered on a value of 500, which is set to approximate the average performance of a typical child age 10-0 (when using age norms) or at the beginning of Grade 5 (when using grade norms). The typical range of *W* abilities within a test is about 430 to 550, although this range can be wider or narrower depending on the trait being measured (LaForte, Daily, & McGrew, 2025).

Reference *W*

During the next stage of test development, when data have been collected from the entire norming sample, the *W* scores are anchored, or linked, to age and grade levels in increments of year and month. For each age and grade group in the norming sample, the median *W*-ability value is identified. This corresponds to the difficulty level of a hypothetical item to which 50% of the age or grade group responded correctly and 50% responded incorrectly. Thus, the median *W* ability represents the location along the *W* scale where an examinee will be equally likely to pass or fail an item. That value is designated the Reference *W*, the criterion score against which an individual's performance, or *W* ability, is compared (LaForte, Dailey, & McGrew, 2025; R. W. Woodcock, personal communication, August 15, 2007). For example, in the WJ V Verbal Attention test, 50% of children age 12 years, 6 months (12-6) obtained a *W* ability of 506 or above, and 50% obtained a *W* ability of 506 or below. Accordingly, the *W* ability of 506 was established as the Reference *W* for children age 12-6 on Verbal Attention (based on LaForte, Dailey, & McGrew, 2025, p. 390).

W Difference

W difference (*W* DIFF) is the difference in *W* units between an individual's obtained *W* ability and the Reference *W*, or median score, of the individual's age or grade peers. For example, a child age 12-6 who obtained a *W* ability of 516 on the WJ V Verbal Attention test would have a *W* difference of +10 (516–506). The *W* difference is the value from which standard scores, percentile ranks, and relative proficiency indexes are derived (Woodcock, 1999).

Utility of the *W* Scale for Reporting Growth

Because the *W* scale is an equal-interval scale, it is particularly useful for reporting an individual's growth in skill, ability, or area of knowledge. Because the *W* units represent item difficulty, an increase in a person's *W* ability represents actual growth in the trait measured. The *W* scale is constructed so that an increase of 10 *W* units represents an increase in the individual's success on tasks similar to those tested. This is true for any 10-point increase on the *W* scale, regardless of the ability being measured or the difficulty level of the task (e.g., a child's ability to identify letters or a college student's ability to solve higher-level math problems). Accordingly, if an examinee's proficiency at an ability increases from one testing to the next, their *W* ability will also increase, reflecting progress (Woodcock & Dahl, 1971; Woodcock, 1999).

In contrast, peer-comparison scores do not show growth as clearly because they describe a person's ordinal position, or rank order, in a group rather than their proficiency. If a person improves on a trait at the same rate as their peers, regardless of the amount of improvement, the resultant score will be the same as it was on the previous testing (see Figure 1). Consequently, the *W* score is a more informative metric than a peer-comparison score for examining and reporting growth.

Figure 1.
Growth Illustrated by W Score Versus Peer-Comparison Score

Michael was tested on the WJ V Paragraph Reading Comprehension test at age 8 years, 3 months (8-3) and again at age 11 years, 2 months (11-2). Although his *W* ability had increased by 26 points, his standard score (SS) remained the same.

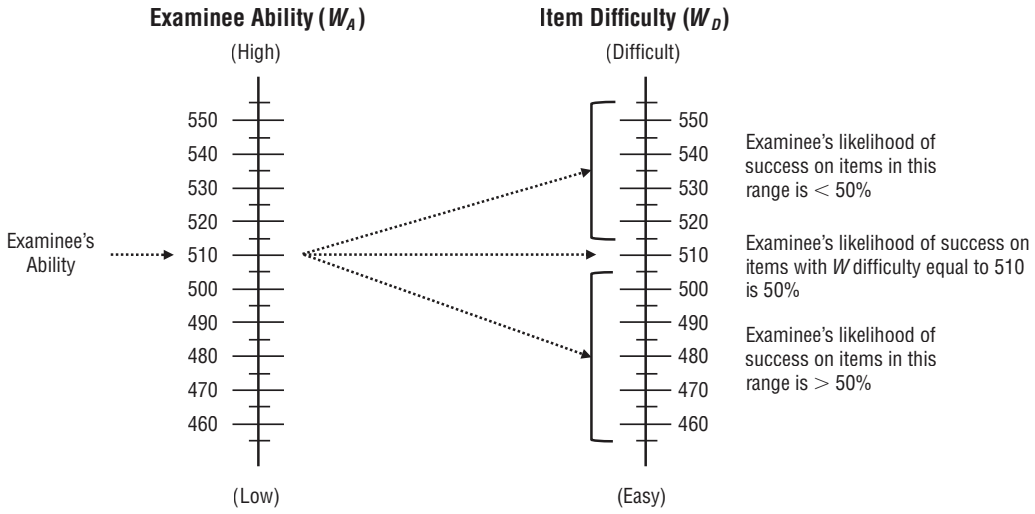
	WJ V Paragraph Reading Comprehension			
Age	***W* Ability**	**Increase**	**SS**	**PR**
8-3	462	—	84	14
11-2	488	+26	84	14

Michael did, in fact, make progress in Reading Comprehension, but he did so at about the same rate as others of his age who were also at the 14th percentile. Thus, the norm-referenced scores do not indicate a change. It is the *W* score that demonstrates the amount of progress he has made. A 26-point increase indicates that the paragraph difficulty level Michael could previously read and understand with 50% success, he can now read and understand with 94% success (see Table 2).

Utility of the *W* Scale for Predicting Success on Items and Tasks at Varying Difficulty Levels

A significant advantage of having *W* ability and *W* difficulty on the same scale is that, given a person's ability level (*W* ability), there is a mathematical basis for predicting the individual's likelihood of success on an item at any other level of difficulty (Woodcock, 1999), most importantly, at the median difficulty level for their peer group (the Reference *W*). The degree of probability is a function of the size and direction (positive or negative) of the *W* difference. As shown in Figure 2, when a person's *W* ability is the same as the *W* difficulty, the *W* difference is 0 (zero). Because the Reference *W* for any age or grade group is the *median* difficulty level, the person has a 50% chance of responding correctly to any item of equal difficulty. It is likely, then, that the person will be able to handle similar tasks of equal difficulty as well as average age- or grade-peers could handle them. Accordingly, if the person's ability level is higher than the Reference *W*, their odds of success increase, and their performance is likely to exceed that of their peers. Conversely, if the individual's ability level is lower than the Reference *W*, the odds of success decrease, and they are likely to have more difficulty than their peers (Woodcock, 1978, 1999). The larger the *W* difference is in a positive direction, the higher the probability of success; the larger the *W* difference is in a negative direction, the lower the probability of success. As noted previously, during the norming process, Reference *W*s were established for every month at every age and grade level. Consequently, if a person's *W* ability is known, a mathematical prediction can be made regarding their degree of success at the level of task difficulty where age- or grade-peers will score 50%.

Figure 2.
Relationship of a Person's Ability-to-Item Difficulty on the W *scale*



From LaForte, E. M., Dailey, D., McGrew, K. S. (2025). Technical Manual. *Woodcock-Johnson V.* Riverside Assessments, LLC.

Based on this capability, the person's probability of success can be projected. Table 2 shows that the W difference of 0 (zero) is equated with a 50% probability of passing the criterion item. A *W* difference of +10 (*W* ability − Reference *W*) indicates that the person has a 75% probability of success, while a *W* difference of −10 indicates that they have a 25% probability of success (Woodcock, 1978; Woodcock & Dahl, 1971).

Table 2.
Probability of Success Given the Difference Between Ability and Difficulty on the W *Scale*

Ability Minus Difficulty (W_{A-D})	Probability of Success (*P*)	Ability Minus Difficulty (W_{A-D})	Probability of Success (*P*)
+50	.996	0	.500
+45	.993	–5	.366
+40	.988	–10	.250
+35	.979	–15	.161
+30	.964	–20	.100
+25	.940	–25	.060
+20	.900	–30	.036
+15	.839	–35	.021
+10	.750	–40	.012
+5	.634	–45	.007
0	.500	–50	.004

From LaForte, E. M., Dailey, D., McGrew, K. S. (2025). Technical Manual. *Woodcock-Johnson V.* Riverside Assessments, LLC.

Relative Proficiency Index

A practical limitation with using 50% as the Reference *W* is that, in education, 90%, not 50%, is more often considered proficient. Consequently, to facilitate practical use of the relative proficiency index, the Reference *W* (the criterion) was set at a difficulty level 20 *W* units *lower* than the median *W* (Woodcock, 1999), rather than *at* the median *W*, representing the level of difficulty at which 90% (rather than 50%) of people at a particular age or grade level are expected to respond correctly. Accordingly, the relative proficiency index is a criterion-referenced score that describes the probability of a person's success on a task similar to the tasks used in the assessment at the level of difficulty that 90% of average grade or age peers can manage.

The RPI is represented as a fraction, with the person's expected level of success as the numerator and the 90% criterion as the denominator. An RPI of 60/90 suggests that the person is expected to be about 60% successful on a task that typical peers would perform with 90% success.

> Jennifer's scores exemplify the change in the Reference *W* from a 50% to a 90% proficiency criterion. Jennifer, age 13-9, obtained a total test score of 11 on the WJ V Calculation test. Using age norms, the *Riverside Score*® platform transformed her raw score to a *W* ability of 487. The Reference *W* score for Calculation for Jennifer's age group is 509, so the *W* difference is −22.
>
> Using the original table (Table 2), Jennifer's probability of success is 8% at a difficulty level where her typical age peers' probability of success is 50%. Using the revised table (Table 3), now centered on 90%, the same *W* difference of −22 indicates that Jennifer has a 45% chance of success at the difficulty level where her typical age peers would have a 90% chance of success. The *W*-difference score is the same, but the prediction is more relevant to classroom expectations.

The advantage of the RPI over other types of criterion-referenced scores is that the criterion items and the person's proficiency level are derived from norms—real scores from real people.

Table 3 shows the range of RPIs with their corresponding *W* differences.

Table 3.
Relative Proficiency Indexes (RPIs) Associated With W *Differences (*W *DIFF) Along the* W *Scale*

W **Difference**	**RPI**	***W*** **Difference**	**RPI**	***W*** **Difference**	**RPI**
29 and above	100[1]/90	−1	89/90	−36	15/90
28	99/90	−2	88/90	−37	13/90
27	99/90	−3	87/90	−38	12/90
26	99/90	−4	85/90	−39	11/90
25	99/90	−5	84/90	−40	10/90
24	99/90	−6	82/90	−41	9/90
23	99/90	−7	81/90	−42	8/90
22	99/90	−8	79/90	−43	7/90
21	99/90	−9	77/90	−44	7/90
20	99/90	−10	75/90	−45	6/90
19	98/90	−11	73/90	−46	5/90
18	98/90	−12	71/90	−47	5/90
17	98/90	−13	68/90	−48	4/90
16	98/90	−14	66/90	−49	4/90
15	98/90	−15	63/90	−50	4/90
14	98/90	−16	61/90	−51	3/90
13	97/90	−17	58/90	−52	3/90
12	97/90	−18	55/90	−53	3/90
11	97/90	−19	53/90	−54	2/90
10	96/90	−20	50/90	−55	2/90
9	96/90	−21	47/90	−56	2/90
8	96/90	−22	45/90	−57	2/90
7	95/90	−23	42/90	−58	2/90

Table 3. *(cont.) Relative Proficiency Indexes (RPIs) Associated With* W *Differences (*W *DIFF) Along the* W *Scale*

W Difference	RPI	*W* Difference	RPI	*W* Difference	RPI
6	95/90	−24	39/90	−59	1/90
5	94/90	−25	37/90	−60	1/90
4	93/90	−26	34/90	−61	1/90
3	93/90	−27	32/90	−62	1/90
2	92/90	−28	29/90	−63	1/90
1	91/90	−29	27/90	−64	1/90
0	90/90	−30	25/90	−65	1/90
		−31	23/90	−66	1/90
		−32	21/90	−67	1/90
		−33	19/90	−68	1/90
		−34	18/90	−69 and below	0[2]/90
		−35	16/90		

[1] Approximate value (> 99.5).
[2] Approximate value (< 0.5).

Reporting RPIs Using Descriptive Labels

A useful feature of the RPI is the choice of descriptive labels for different levels of proficiency, functioning, and development associated with an individual's *W* difference or RPI (see Table 4). The examiner can select the type of descriptor typically used within their profession. In education, for example, "Proficiency" might be used to describe academic achievement, while "Development" might be used to describe cognitive and language abilities. "Implications" represents the individual's perceived level of difficulty or facility with the task (Schrank & Woodcock, 2002).

Table 4.
Descriptive Labels and Implications Corresponding to W *Differences (*W *DIFF) and Relative Proficiency Indexes (RPI)*

W-Difference Values	Reported RPIs	Proficiency	Development	Implications for Age-/Grade-Level Tasks
+31 and above	100/99	Very Advanced	Very Advanced	Extremely Easy
+14 to +30	98/90 to 100/90	Advanced	Advanced	Very Easy
+7 to +13	95/90 to 98/90	Average to Advanced	Age-Appropriate to Advanced	Easy
−6 to +6	82/90 to 95/90	Average	Age-Appropriate	Manageable
−13 to −7	67/90 to 82/90	Limited to Average	Mildly Delayed to Age-Appropriate	Difficult
−30 to −14	24/90 to 67/90	Limited	Mildly Delayed	Very Difficult
−50 to −31	3/90 to 24/90	Very Limited	Moderately Delayed	Extremely Difficult
−50 and below	0/90 to 3/90	Extremely Limited	Severely Delayed	Virtually Impossible

Adapted from Schrank, F. A., & Woodcock, R. W. (2002). Manual and Checklists (p.10). *Report Writer for the WJ III*. Riverside Assessments, LLC.

Sample Statements for Reporting RPIs

The following are examples of statements that might be used to describe an individual's RPIs. Specific wordings will vary depending on the cognitive ability, language, or achievement area being addressed and the level of the RPI. It is important to note when the standard score and the RPI indicate different levels of ability.

Cognitive

Jeremy's RPIs on tests of auditory memory indicate that his ability to hold verbal information, such as a sentence, in mind for immediate use is Manageable; however, doing so while working with it in a task is likely to be Difficult to Very Difficult, depending on the complexity (Auditory Working Memory: RPI 76/90).

Compared with others in his grade, Luke is advanced in his ability to perceive part-whole relationships within visual information and to imagine visual patterns from a variety of perspectives. When other 10th graders are 90% proficient on similar tasks, Luke is expected to be 98% proficient (Visual Processing: RPI 98/90).

Donna had significant difficulty manipulating the individual sounds in words, a skill that is a necessary foundation for using phonics for reading. Her RPI of 56/90 predicts that when other first-grade students have mastered the ability to change the sounds or syllables in words to produce other words (e.g., changing the sound /t/ in *top* to /h/ creates *hop*), Donna will do similar tasks with 56% proficiency.

Achievement

Although Nico's standard score on Sentence Writing Fluency is in the average range (SS 93), his RPIs of 74/90 on this test and 79/90 on Letter Writing Fluency indicate that he will need more time than his grade peers on writing tasks.

Mark's RPI of 66/90 on the Brief Math cluster indicates that he would find math assignments at grade level to be very difficult.

Although Lucia's performance was considerably higher on the Applied Problems test than on the Calculation test, her RPIs of 70/90 and 40/90 indicate that she will experience frustration when dealing with grade-level math concepts and number relationships.

Sam's RPI of 21/90 on the Phoneme-Grapheme Knowledge cluster indicates that when he sounds out and spells words that he does not already know, Sam will demonstrate 21% proficiency when the average fourth-grade student would demonstrate 90% proficiency. Sam's knowledge of phoneme-grapheme correspondences and spelling patterns is very limited.

Compared with other college freshman, Chloe demonstrated advanced proficiency on tests of general knowledge typically learned from school and real-world experience (Academic Facts: RPI 95/90; General Information: RPI 98/90).

Interpreting Instructional and Developmental Zones

This section provides sample statements used to describe a ninth-grade student's instructional zone.

> Alicia, a sixth grade student, obtained a *W* ability of 453 on the WJ V Basic Reading Skills cluster. The *Riverside Score* online platform showed her instructional zone as GE 1.8 to 2.4, indicating that decoding words at the late first-grade level was likely to be easy for her and decoding words at the mid-second-grade level would be difficult.
>
> Alicia's instructional zone was generated as follows. A test item or similar task that would be very easy for Alicia would have a *W* difficulty of 443, 10 points below her attained ability level (*W* ability). The group in the norming sample with a median score of 443 on the Basic Reading Skills cluster was in Grade 1.8. Consequently, tasks appropriate for students in Grade 1.8 would likely be at Alicia's independent level—the lower end of her instructional zone.
>
> Tasks expected to be very difficult for Alicia (at a frustration level) would have a *W* difficulty of 463—10 points above her *W* ability. The group with a median score of 463 was in Grade 2.4. Consequently, tasks involving decoding and identifying words that are appropriate for students in Grade 2.4 would likely be at Alicia's frustration level—the upper limit of her instructional zone.

The instructional zones and developmental zones available on the *Riverside Score* online platform display RPI ranges in bands. Each zone encompasses a range from 10 *W* units below an individual's *W* ability (RPI 75/90) to 10 *W* units above an individual's *W* ability (RPI 96/90) (see Table 3). The lower and higher limits of the zones are represented by age or grade equivalents for use in instructional planning. Tasks similar in difficulty level to items at the lower end of the range will be quite easy for the individual; those at the higher end will be quite difficult. Instructional zones are reported for academic achievement tests and clusters; developmental zones are reported for cognitive abilities tests and clusters.

Psychologists and diagnosticians will undoubtedly note that the usefulness of the instructional zones for program planning depends on how closely the instructional materials used in their local schools are aligned with the ability levels of their students' age or grade peers nationally (those represented in the norming sample). Also, regardless of the curriculum, different publishers may use different methods to develop the grade levels for their instructional materials. For example, third-grade reading material in one basal reading series may be generally easier or harder than third-grade reading material in another basal reading series. Furthermore, the readability level of either of these reading series may be quite different than that of a trade book that a publisher has labeled as having a third-grade readability level. When making instructional decisions, the psychologist or diagnostician must consider the alignment of the school's instructional materials with national standards. Qualitative analysis of the student's skills and abilities can help to fine-tune the match between the instructional zone indicated by the WJ V, the specific materials used in the local school, and the student's actual functioning.

The Difference Between RPI and Peer-Comparison Scores

A common misconception is that peer-comparison scores, such as standard scores or percentile ranks, indicate ability or achievement levels. This is not true. Rather, they merely show a person's rank order or "place in the line"—the position at which their score falls within the distribution of scores obtained by age or grade peers in the norming sample. In contrast, the RPI describes the person's level of proficiency in the skill, ability, or area of knowledge based on the probability of their success on a specific level of task difficulty.

The Apparent Contradiction Between an RPI and a Peer-Comparison Score

Occasionally, an evaluator will note a marked difference between the RPI and a standard score (SS) on a test or cluster. For example, on the Letter-Word Identification test, Leo, a sixth-grade student, obtained an RPI of 39/90 and a standard score of 86 (low average). Although these scores appear incongruous, they actually are not, because the RPI and the standard score are derived from separate and unrelated calculations. Each score is derived as follows.

> RPI = 39/90: For Grade 6.1, the Reference *W* for Letter-Word Identification is 515; Leo's *W ability* was 491, producing a *W* difference of −24. Referring to Table 3, this *W* difference translates to an RPI of 39/90. Note that standard deviations (*SD*) are not listed in Table 3. The *SD* is not involved in this calculation.
>
> SS = 86: This score is based on the relationship between the *W* difference and the *SD*. As noted, Leo's *W* difference is −24. The *SD* in *W* units for Letter-Word Identification at Grade 6.1 is 25. Accordingly, Leo's *z* score is −0.96 (z = *W* difference ÷ *SD*). The following algorithm uses the *z* score to generate a standard score with a mean (*M*) of 100 and a *SD* of 15: $M - (z \times 15) = SS$. Using this equation, Leo's standard score is calculated as $100 - (0.96 \times 15) = 85.6$, which converts to a rounded standard score of 86.

Consequently, although Leo's standard score on reading words at a sixth-grade level is in the low average range (and within a standard deviation of the mean), in actuality, his RPI indicates that his proficiency will be 39% in basic reading skills that his grade peers have already mastered.

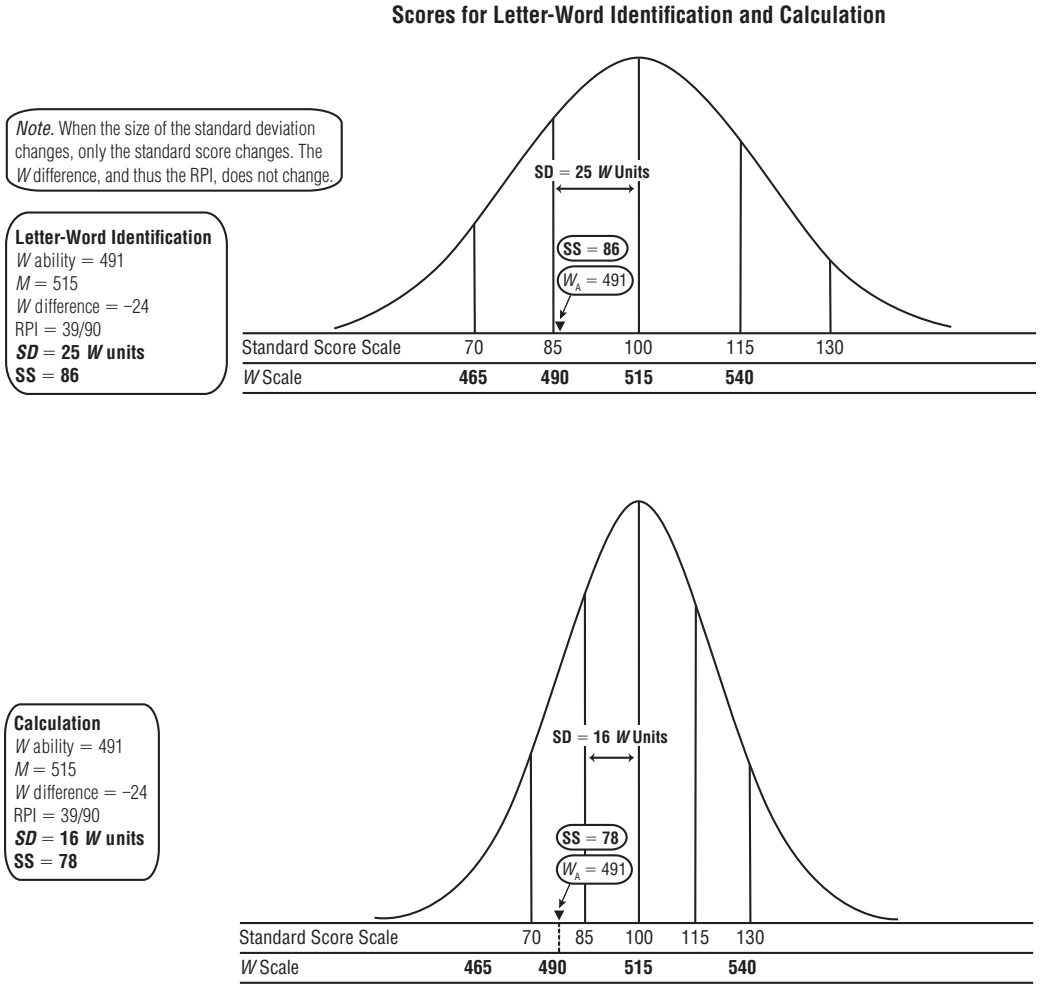
The Effect of Standard Deviations on Peer-Comparison Scores

When the standard deviation of the *W* scores for a test within a specific age or grade group is relatively large (as it is in the example of Leo) or relatively small, it is more likely that there will be a marked difference between the RPI and the standard score. Because the standard score is tied to the standard deviation, standard scores vary accordingly, whereas the same *W* difference will always produce the same RPI (see Table 3). Consequently, "trying to compare the RPI to the standard score is like trying to compare apples to ostriches" (R. W. Woodcock, personal communication, June 4, 2007).

The lack of a constant relationship between the RPI and the standard deviation is illustrated in Figure 3, which shows Leo's scores on the Letter-Word Identification and Calculation tests. At Grade 6.1, the mean (*M*) of both tests is the same (515), and, as it happened, Leo obtained a *W* ability of 491 on both tests, resulting in a *W* difference of −24 and an RPI of 39/90 (see Table 3) for both tests. The standard deviations, however,

are different for each test. As stated above, the *SD* of Letter-Word Identification is 25 *W* units—just slightly larger than Leo's *W* difference. Accordingly, his *W* ability falls just inside the lower limit of 1 *SD*. When converted into a standard score scale (as shown above), his standard score on Letter-Word Identification is 86. The standard deviation for Calculation is 16. With the same *W* difference (−24), Leo's *W* score now falls 8 *W* units outside the lower limit of 1 *SD*, resulting in a standard score of 78. Note that the only difference between Leo's standard score of 86 on Letter-Word Identification and 78 on Calculation is the size of the standard deviations at Grade 6.1 for each test.

Figure 3.
*Comparison of a Sixth-Grade Student's Relative Proficiency Indexes (RPI), Standard Scores (SS), and Standard Deviations (*SD*) on Two Tests*



Proficiency Versus Position

In evaluations, the relative proficiency index makes an important contribution that cannot be derived from peer-comparison scores. For example, if a child's standard score for a cognitive ability is not significantly low, the examiner may not consider a weakness in this ability as a possible explanation for the child's academic difficulty. The weakness in this cognitive ability may become obvious, however, when the RPI is considered. Moreover, the standard score may underestimate the child's academic weakness, whereas the RPI might more accurately reflect the child's level of performance in the classroom. Many psychologists have had the experience of telling a teacher that a student scored in the average or low average range on a test, only to have the teacher respond with disbelief because the score does not reflect the child's struggles in daily class work. Because of the difference between the information provided by peer-comparison scores and that provided by the RPI, the results of an evaluation might be misinterpreted if RPI scores are not considered. Woodcock (1999, p. 109) illustrated the importance of recognizing the difference between position

in a distribution and level of competence by explaining that people with visual or hearing problems are usually classified as having a disability and in need of services based on weaknesses in the quality of their performance in vision and hearing tasks, not because they fall below some point on a norm-referenced scale.

The Case of Jeremy

An example of the importance of the proficiency versus position distinction is the case of Jeremy, age 7 years, 9 months (7-9), who is making very limited progress in reading and spelling. Despite individualized tutoring by the first-grade teacher, Jeremy has entered second grade unable to sound out three-letter words. His father reports that he reads with Jeremy every evening, going through the text word by word, reviewing the letter sounds, and helping Jeremy sound out the words. He stated, "We'll work on a word on one page, and I'll think he's got it, and then he doesn't recognize it later on the same page." Jeremy has recently begun claiming that he is sick in the mornings before school and pleads to stay home. Clearly, Jeremy is seriously delayed in his development of reading and spelling skills, a situation that is producing secondary emotional problems.

Jeremy's parents have requested an evaluation to determine his current achievement in reading and spelling and to ascertain the reasons for his difficulty in learning these skills. Jeremy was administered selected tests from the WJ V Tests of Cognitive Abilities (WJ V COG; McGrew, Mather, & LaForte, 2025) and WJ V Tests of Achievement (WJ V ACH; Mather, McGrew, LaForte, & Wendling, 2025a). Table 5 shows Jeremy's standard scores and RPIs in reading and writing skills.

Table 5.
Jeremy's Standard Scores (SS) and Relative Proficiency Index (RPI) scores in Reading and Writing With Descriptive Labels

Cluster/Test	**SS**	**RPI**	**Proficiency**	**Implications**
Basic Reading Skills	77	9/90	Very Limited	Extremely Difficult
Passage Comprehension	82	34/90	Limited	Very Difficult
Written Expression	84	67/90	Limited	Very Difficult

Analysis of Jeremy's responses during the evaluation indicates that when sounding out two- and three-letter words, he typically produced the correct sounds individually but was unable to retain the sounds and their sequence when blending them (e.g., *nap* becomes *pen*). He did not recognize common sight words (e.g., *here*, *they*), and he was likely to spell only the first and last sounds of a word correctly (e.g., *kad* for *crawled*). Jeremy occasionally recalled orthographic patterns correctly (e.g., the *ck* in *rock*), but he frequently produced inaccurate and unlikely letter combinations (e.g., *hasl* for *house* or *eher* for *here*). His written expression scores were reduced due to indecipherable spellings that obscured the meaning of his sentences.

Although Jeremy's standard scores in reading and spelling are low (SS 77, 78), they do not suggest the degree of weakness that his parents and teacher report or the difficulties he exhibited during testing. In contrast, the RPIs accurately reflect the real-world severity of his difficulties. When Jeremy's grade peers demonstrate 90% success on basic reading skills, Jeremy is predicted to be 9% successful. When his classmates understand 90% of what they read, Jeremy is expected to understand 34%. The descriptive labels of the RPIs in Table 5 indicate that Jeremy's proficiency in basic reading skills and comprehension is Very Limited; the instructional implications indicate that grade-level reading tasks will be Extremely Difficult, which, in fact, they are. Decisions based solely on Jeremy's standard scores would underestimate the gravity of his need for specialized instruction in reading and spelling.

The evaluation further shows that Jeremy has many strengths in cognitive abilities and language. His standard scores and RPIs indicate that he is in the average or high average range in logical reasoning for problem solving, visual-spatial thinking, general knowledge,

and oral language. Test results also identify cognitive weaknesses, the importance of which is to ascertain the major factors contributing to Jeremy's academic difficulties and to inform the design of an effective instructional program for him.

Table 6 shows Jeremy's standard scores and RPIs for four ability clusters from the WJ V Tests of Cognitive Abilities (McGrew, Mather, & LaForte, 2025) and WJ V Virtual Test Library (WJ V VTL; Mather, McGrew, LaForte, & Wendling, 2025b).

Table 6.
Jeremy's Standard Scores (SS) and Relative Proficiency Indexes (RPI) for Four WJ V COG and WJ V VTL Ability Clusters With Descriptive Labels

Cluster	SS	RPI	Proficiency	Instructional Implications
Cognitive Processing Speed	95	96/90	Average	Manageable
Auditory Memory Span	97	86/90	Average	Manageable
Auditory Working Memory Capacity	89	66/90	Limited	Very Difficult
Phonological Awareness	85	22/90	Very Limited	Extremely Difficult

If Jeremy's standard scores are interpreted in a typical (and incorrect) manner as indications of ability level, it would appear that Jeremy has strengths in auditory memory span and cognitive processing speed. His standard scores indicate only a mild weakness in phonological awareness and auditory working memory. After all, the lowest of his standard scores are within the low average range and within a standard deviation of the mean. In many school districts that use a discrepancy procedure, these scores will not qualify him for special education services, and a pattern of strengths and weaknesses is not obvious. However, Jeremy's RPIs provide a more understandable explanation for the severity of his difficulty in learning reading and spelling skills. Based on his RPIs, tasks requiring Jeremy to hold verbal information in mind for immediate use should be manageable but maintaining it while other cognitive abilities work with it, transform it, and/or transfer it to long-term memory is likely to be very difficult. Jeremy's success in tasks requiring auditory working memory is predicted to be 66% compared to his typical grade peers' success rate of 90% (see Table 6). The instructional implications are that Jeremy will find similar tasks very difficult. Additionally, Jeremy's RPI of 22/90 in phonological awareness is clearly a major contributing factor to his difficulty learning phonics skills and omitting or misplacing sounds when trying to spell. In this case, the RPIs, not the standard scores, inform the evaluator of the specific cognitive weaknesses that contribute to Jeremy's significant difficulties in learning basic reading and spelling skills.

An additional point relates to the concept of "significance." Jeremy's school district uses 1.5 standard deviations as the criterion for a significant discrepancy between a student's predicted standard score and their actual score, after correcting for regression. The Ability/Achievement Comparison shown on the *Riverside Score* online platform reports a discrepancy that shows Jeremy meets this criterion in Basic Reading Skills but not in Written Expression. Yet his RPI of 67/90 indicates that his written expression skills are limited and that he will find grade-appropriate writing tasks very difficult. Although the discrepancy based on peer-comparison scores is not significant by his school district's standards, the RPI describes a writing weakness that is educationally significant and is confirmed by his classroom writing samples. Additionally, the reported Intra-Ability and Ability/Achievement Comparisons show no significant cognitive weaknesses, whereas the RPIs describe weaknesses in working memory and phonological awareness that clearly have educational effects. The point is that evaluators cannot depend solely on discrepancies among peer-comparison scores to analyze a person's abilities and the factors contributing to their learning difficulties. Evaluators must also consider the possible educational significance of the quality of an individual's performance on a test, and this is best represented by the RPI.

Considerations for Using the RPI in View of the Individuals with Disabilities Education Improvement Act and in Developing Interventions

In describing evaluation procedures, the Individuals with Disabilities Education Improvement Act (IDEA 2004; U.S. Congress, 2004) regulations state that assessment tools must be technically sound (IDEA 2004, §300.304[b][3]) and provide relevant information that will be of direct assistance in determining the educational needs of the child (IDEA 2004, §300.304[c][7]). Additionally, in determining that a child has a specific learning disability (SLD), one factor that may be considered is the pattern of strengths and weaknesses relevant to SLD (IDEA 2004, §300.309[a][2][ii]) (U.S. Department of Education, 2006).

One of the most relevant aspects of information regarding a student's educational needs is their current proficiency in cognitive abilities, language abilities, and academic skills or knowledge. Can the student manage a task, or a set of tasks, that is used to assess a skill or ability at the same level of difficulty as their peers? Whether the student can do this and the level at which they can do this is critical information, irrespective of the standard scores. Using the RPI and peer-comparison scores, along with knowledge of the research regarding which cognitive abilities facilitate specific academic skills and which are implicated in specific academic deficiencies, an evaluator can better understand or theorize the reasons for a student's failure to acquire certain skills or knowledge. Most importantly, this information can guide the educational team's selection or design of instructional methods that are most likely to be effective for the student.

Consider Jon and Andrea, both of whom have RPI scores in basic reading and spelling that indicate limited proficiency. Jon has weak perceptual speed but adequate working memory and phonological awareness. Andrea has adequate processing speed but weak phonological awareness and lexical retrieval. Both will need instructional programs that are systematic, that are cumulative in reviewing and incorporating previously learned material at each step, and that ensure the student has mastered a skill or concept before moving on. However, Jon is likely to need supplementary procedures to help him develop instantaneous recognition of letter patterns such as odd spellings (e.g., *enough*, *height*), syllable patterns, and morphemes. Andrea will need a strong emphasis on developing automaticity in phonemic awareness skills in conjunction with phonics and overlearning of new vocabulary for automatic retrieval. The standard scores (or percentile ranks) may indicate the cognitive and academic profiles that will lead the evaluator to this insight, but it is more likely that the RPIs, along with qualitative analysis, will do so. IDEA 2004 mandates the use of technically sound assessment instruments in conducting an evaluation, but as always, it is up to the evaluator and other qualified professionals to decide what information is the most relevant in determining the educational needs of the child.

Interpreting Achievement and Growth

When selecting test scores to report to parents, teachers, and the individual who was evaluated, some scores are more easily explained than others. Peer-comparison scores are often explained in terms of the percentile rank (which can be visualized easily as the person's position in a line of people) rather than in terms of the standard scores. Percentile ranks or other peer-comparison scores, however, do not convey the information that people are most interested in—the person's proficiency in the trait being measured compared to what is expected for their age or grade. Consequently, the recipients of

the report often ask, "What grade level is that?" Well-informed psychologists and other evaluators are aware of the problems that accompany the use of grade or age equivalents in interpreting an individual's test performance. Although many of the problems associated with the interpretation of these scores do not occur in the WJ V assessments, two issues should be considered: (a) reporting a person's level of achievement and (b) quantifying their growth in the trait assessed.

Age and grade equivalents on appropriately designed tests do represent a level of development in a skill, ability, or area of knowledge. If Johnny is in Grade 9 and his *W* ability on Applied Problems is the same as that of the average sixth grader's *W* ability on Applied Problems, he is, in fact, performing most similarly to an average sixth grader on that test. The statement describing his achievement in these terms, however, is likely to be too broad. "Johnny's ability to solve practical math problems is at the sixth-grade level" implies that all aspects of his problem-solving abilities are at the same level. In reality, Johnny may handle some areas of math application as well as the average sixth-grade student and other areas of math less well. His parents and teachers are likely to understand Johnny's situation more accurately if they are told, "Johnny's RPI in Applied Problems is 45/90. This means that he is likely to be about 45% successful when attempting to solve practical math problems that an average ninth grader can solve with 90% success."

The use of age and grade equivalents is more problematic when interpreting growth because they are not on equal-interval scales. The significance of any increase in a child's age or grade score is dependent on the trait being measured and the amount of development that typically occurs during the interval of time since the last assessment. For example, 1 year's growth in basic reading skills in the primary grades indicates considerably more learning than 1 year's growth in this same skill in middle school because children learn most of these skills in the primary grades. It is both more meaningful and more accurate to say, "Since we last tested Johnny, his RPI has increased from 35/90 to 75/90. Whereas a year ago, he was likely to handle grade-level reading material with about 35% success, his current scores indicate that he would be about 75% successful at that task." Whether the student is in 2nd grade or 12th grade, the statement conveys the same meaning.

Appended to this paper are Instructional Zone Profile Worksheets and Developmental Zone Profile Worksheets. Examiners should complete these worksheets to get a better visual representation of strengths and weaknesses based on the RPI.

Summary

The *W* score and relative proficiency index are two unique metrics available in the WJ V. Because *W* scores are linked to normative data, and *W* abilities (describing the ability level of the person) and *W* difficulties (describing the difficulty level of the items) are on the same equal-interval scale, these values provide a mathematical basis for predicting a person's proficiency at any level of task difficulty. The *W* score and the RPI are also useful in interpreting and reporting the amount of change (gain or loss of proficiency) a person makes in any assessed trait over time. The RPI is particularly useful in indicating educationally significant difficulties that may not be obvious solely from peer-comparison scores. Consequently, psychologists and diagnosticians who are unaware of the value of proficiency scores may overlook important information regarding an individual's skills, abilities, and areas of knowledge.

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Appendix

Table A-1.
Instructional Zone Profile Worksheet for WJ V Tests of Achievement

Instructions: Place an X in the box that corresponds to the examinee's RPI for each cluster or test that you are reporting. Delete any clusters or tests that are not administered.

Achievement Clusters & Tests	Virtually Impossible to Extremely Difficult 0/90 to 24/90	Very Difficult 24/90 to 67/90	Difficult 67/90 to 82/90	Manageable 82/90 to 95/90	Easy 95/90 to 98/90	Very Easy/ Extremely Easy 98/90 to 100/90
Oral Language						
Oral Language Samples						
Oral Comprehension						
Picture Vocabulary						
Story Comprehension						
Listening Comprehension						
Oral Comprehension						
Story Comprehension						
[Understanding Directions]*						
Oral Expression						
Oral Language Samples						
Picture Vocabulary						
Vocabulary						
Academic Vocabulary						
Picture Vocabulary						
[General Information]*						
Broad Achievement						
Letter-Word Identification						
Calculation						
Spelling						
Math Facts Fluency						
Passage Comprehension						
Applied Problems						
Sentence Reading Fluency						
Written Language Samples						
Sentence Writing Fluency						
Academic Skills/Brief Achievement						
Letter-Word Identification						
Calculation						
Spelling						
Academic Applications						
Passage Comprehension						
Applied Problems						
Written Language Samples						

Table A-1. *(cont.)*
Instructional Zone Profile Worksheet
for WJ V Tests of Achievement

Achievement Clusters & Tests	Virtually Impossible to Extremely Difficult 0/90 to 24/90	Very Difficult 24/90 to 67/90	Difficult 67/90 to 82/90	Manageable 82/90 to 95/90	Easy 95/90 to 98/90	Very Easy/ Extremely Easy 98/90 to 100/90
Academic Knowledge						
Academic Vocabulary						
Academic Facts						
Academic Fluency						
Math Facts Fluency						
Sentence Reading Fluency						
Sentence Writing Fluency						
Brief Reading						
Letter-Word Identification						
Passage Comprehension						
Basic Reading Skills						
Word Attack						
Letter-Word Identification						
[Oral Reading]*						
Phoneme-Grapheme Knowledge						
Word Attack						
Spelling of Sounds						
Reading Fluency						
Sentence Reading Fluency						
Word Reading Fluency						
Reading Comprehension						
Passage Comprehension						
Paragraph Reading Comprehension						
[Reading Recall]*						
Brief Writing						
Sentence Writing Accuracy						
Written Language Samples						
Basic Writing Skills						
Spelling						
Sentence Writing Accuracy						
Spelling Skills						
Spelling						
Spelling of Sounds						
Written Expression						
Written Language Samples						
Sentence Writing Fluency						
[Letter Writing Fluency]*						
Brief Math						
Calculation						
Applied Problems						
Number Concepts						
Magnitude Comparison						
Number Sense						

Table A-1. *(cont.)*
Instructional Zone Profile Worksheet
for WJ V Tests of Achievement

Achievement Clusters & Tests	Virtually Impossible to Extremely Difficult 0/90 to 24/90	Very Difficult 24/90 to 67/90	Difficult 67/90 to 82/90	Manageable 82/90 to 95/90	Easy 95/90 to 98/90	Very Easy/ Extremely Easy 98/90 to 100/90
Math Problem Solving						
Math Problem Identification						
Applied Problems						
[Number Series]*						
Math Calculation Skills						
Math Facts Fluency						
Calculation						

*Tests in brackets are single tests that are not part of the cluster but that are most related to the cluster skill.

Table A-2.
Developmental Zone Profile Worksheet for WJ V Tests of Cognitive Abilities and WJ V Virtual Test Library

Instructions: Place an X in the box that corresponds to the examinee's RPI for each cluster or test that you are reporting. Delete any clusters or tests that are not administered.

Cognitive/VTL Clusters & Tests	Virtually Impossible to Extremely Difficult 0/90 to 24/90	Very Difficult 24/90 to 67/90	Difficult 67/90 to 82/90	Manageable 82/90 to 95/90	Easy 95/90 to 98/90	Very Easy/ Extremely Easy 98/90 to 100/90
GIA						
Matrices						
Semantic Word Retrieval						
Spatial Relations						
Verbal Analogies						
Story Recall						
Number-Pattern Matching						
Oral Vocabulary						
Verbal Attention						
BIA						
Oral Vocabulary						
Matrices						
Verbal Attention						
Gf-Gc Composite						
Matrices						
Analysis-Synthesis						
Oral Vocabulary						
Verbal Analogies						
Comprehension-Knowledge						
Verbal Analogies						
Oral Vocabulary						
Fluid Reasoning						
Matrices						
Analysis-Synthesis						
[Concept Formation]*						
Cognitive Processing Speed						
Letter-Pattern Matching						
Number-Pattern Matching						
Cognitive Efficiency						
Number-Pattern Matching						
Verbal Attention						
Visual Processing						
Spatial Relations						
Block Rotation						
Auditory Memory Span						
Memory for Words						
Sentence Repetition						
Auditory Working Memory Capacity						
Numbers Reversed						
Verbal Attention						
[Animal-Number Sequencing]*						

Table A-2. *(cont.)*
Developmental Zone Profile Worksheet for WJ V Tests of Cognitive Abilities and WJ V Virtual Test Library

Cognitive/VTL Clusters & Tests	Virtually Impossible to Extremely Difficult 0/90 to 24/90	Very Difficult 24/90 to 67/90	Difficult 67/90 to 82/90	Manageable 82/90 to 95/90	Easy 95/90 to 98/90	Very Easy/ Extremely Easy 98/90 to 100/90
Long-Term Storage						
Story Recall						
Story Comprehension						
Phonological Awareness						
Sound Blending						
Segmentation						
[Nonsense Word Repetition]*						
Phonological Manipulation						
Sound Deletion						
Sound Substitution						
[Sound Reversal]*						
Retrieval Fluency						
Semantic Word Retrieval						
Phonemic Word Retrieval						
Phonemic Retrieval Fluency						
Phonemic Word Retrieval						
Rapid Phoneme Naming						
RAN–Reading						
Rapid Picture Naming						
Rapid Letter Naming						
Rapid Phoneme Naming						
RAN–Math						
Rapid Number Naming						
Rapid Quantity Naming						
Single Tests						
[Visual-Auditory Learning]*						
[Visual Working Memory]*						
[Symbol Inhibition]*						

*Tests in brackets are single tests that are not part of the cluster but that are most related to the cluster skill.

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