Procedures for Conducting AAD Analysis Using the WISC-V

Ability-Achievement Discrepancy (AAD) Analysis is one of three methods recommended by the Individuals with Disabilities Education Improvement Act (IDEIA, 2004) to establish eligibility for direct specialized instruction under the classification Specific Learning Disability (SLD). We’re aware that some systems are using other approaches (PSW, RTI, hybrid) to SLD identification, rather than a straight AAD; however, because the tables used for computing AAD manually are slightly different in the WISC-V, we’re offering this article.

Using AAD Analysis, clinicians compare an examinee’s intellectual ability to his or her achievement in eight areas: listening comprehension, oral expression, basic reading, reading comprehension, reading fluency, written expression, mathematics calculation, and mathematics problem-solving. The Wechsler Intelligence Scale for Children–Fifth Edition (WISC–V) provides the information clinicians need to aid in the identification of specific learning disabilities. This article describes how to use AAD Analysis when the WISC-V is used as the measure of ability and the Wechsler Individual Achievement Test – Third Edition (WIAT-III) is used as the measure of achievement.

Two Methods for Conducting an AAD analysis

There are two primary methods for conducting an AAD analysis: the simple-difference method and the predicted-difference method, also referred to as the predicted-achievement method. The simple-difference method compares the obtained intellectual ability score with achievement scores in the eight SLD areas. The predicted-difference method uses the obtained intellectual ability score to predict an achievement score, and the predicted achievement scores are compared to the obtained achievement scores. In both methods, the statistical significance and the base rate of the discrepancies should be considered.

The analyses for the AAD model can be conducted using the tables in Appendix B of the WISC-V Technical and Interpretive Manual, or using the Q-global web-based scoring and reporting platform. When using Q-Global,

(1) Select the AAD method (Simple Difference or Predicted Achievement), and
(2) Select the WISC-V score* to be used as the ability score.

* The Full Scale IQ (FSIQ) is the recommended intellectual ability score for predicting achievement on the WIAT–III, unless there is some compelling clinical reason to use the VCI, VSI, FRI, QRI, NVI, or GAI.
Simple-Difference Method: Using Tables in the *WISC-V Technical and Interpretive Manual*

With the simple-difference method, an achievement standard score is subtracted directly from a WISC-V composite score. Proper use of simple differences requires consideration of the statistical significance of the difference and the frequency (i.e., the base rate) of the difference in the normative sample or other relevant reference groups (e.g., children with similar clinical conditions).

Table B.7 in the *WISC-V Technical and Interpretive Manual* compares WISC-V scores with achievement scores from the WIAT-III. The table shows the sizes of differences between the achievement test standard scores and the WISC–V standard scores that are statistically significant (Significance) or unusually large (Base Rate).

```
<table>
<thead>
<tr>
<th>WIAT-III Subtest/Composite Score</th>
<th>Significance</th>
<th>Base Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>.05</td>
<td>.01</td>
</tr>
<tr>
<td>Basic Reading</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>Reading Comprehension and Fluency</td>
<td>10</td>
<td>13</td>
</tr>
<tr>
<td>Written Expression</td>
<td>9</td>
<td>12</td>
</tr>
</tbody>
</table>
```

From Table B.7

Predicted-Difference Method: Using Tables in the *WISC-V Technical and Interpretive Manual*

The predicted-difference method, also referred to as the regression-based discrepancy method, uses the intellectual ability score in a regression equation to predict the expected achievement score. The tables for the predicted-difference method are in Appendix B of the *WISC-V Technical and Interpretive Manual*.

Step 1. Find the correlation between the selected WISC-V score and the WIAT-III achievement score (Table B.2). From the section of Table B.2 below, note the correlation between the WISC-V FSIQ and WIAT-III Basic Reading is .60.

```
<table>
<thead>
<tr>
<th>WIAT-III Subtest/Composite Score</th>
<th>FSIQ</th>
<th>VCI</th>
<th>VSI</th>
<th>FRI</th>
<th>ORI</th>
<th>NVI</th>
<th>GAI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Reading</td>
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<td>.55</td>
<td>—</td>
<td>—</td>
<td>.45</td>
<td>.40</td>
<td>.55</td>
</tr>
<tr>
<td>Reading Comprehension and Fluency</td>
<td>.65</td>
<td>.65</td>
<td>—</td>
<td>—</td>
<td>.45</td>
<td>.45</td>
<td>.55</td>
</tr>
<tr>
<td>Written Expression</td>
<td>.70</td>
<td>.60</td>
<td>.40</td>
<td>—</td>
<td>.50</td>
<td>.55</td>
<td>.60</td>
</tr>
</tbody>
</table>
```

Correlation between WISC-V and WIAT-III

Step 2. Using the correlation value, go to Table B.3 to find the predicted achievement score corresponding to the ability standard score. From the section of Table B.3 below, note that with a correlation of .60 and a WISC-V Composite Score of 107, the predicted achievement scores (WIAT-III) would be 104.
Step 3. If the actual achievement score is lower than the predicted score, compute the difference between the predicted and actual achievement scores. Let’s assume an actual achievement score of 85 for WIAT-III Basic Reading. The difference between the predicted achievement score of 104 and the actual achievement score of 85 is 19.

Step 4. Go to Table B.5 to find the values of the difference required for statistical significance. Find the column for the smallest significance level in which the observed difference is greater than or equal to the value in the table. For our example, the observed difference of 19 is greater than the 7 points required for statistical significance at the .01 level.

**Statistical Significance**

<table>
<thead>
<tr>
<th>WIAT–III Subtest/Composite Score</th>
<th>FSIQ</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Significance</td>
</tr>
<tr>
<td></td>
<td>.05</td>
</tr>
<tr>
<td>Basic Reading</td>
<td>5</td>
</tr>
<tr>
<td>Reading Comprehension and Fluency</td>
<td>9</td>
</tr>
<tr>
<td>Written Expression</td>
<td>8</td>
</tr>
</tbody>
</table>

Step 5. If the difference between the predicted and actual achievement scores is statistically significant, return to Table B.5 to determine if the difference is unusual. Find the column for the smallest percentage frequency in which the observed difference is equal to or greater than the value in the table. Note from the section of Table B.5 below that a difference of 19 between the actual and predicted scores for WIAT–III Basic Reading is unusual occurring in approximately 5% of same-age individuals in the normative sample.
Below is a completed sample using the tables from Appendix B in the WISC-V Technical and Interpretive Manual. The Ability-Achievement Discrepancy Analysis table shown here is from the WIAT-III record form. The actual score for Basic Reading is 19 points lower than the score predicted by the Full Scale IQ of 107. The 19-point difference is statistically significant and unusual.

### Base Rate

<table>
<thead>
<tr>
<th>WIAT–III Subtest/Composite Score</th>
<th>FSIQ</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Significance</td>
</tr>
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<td></td>
<td>.05</td>
</tr>
<tr>
<td>Basic Reading</td>
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<td>9</td>
</tr>
<tr>
<td>Written Expression</td>
<td>8</td>
</tr>
</tbody>
</table>

Factors to Consider When Selecting an AAD Analysis Method

The predicted-achievement method is generally preferred because the likelihood of finding a significant AAD is the same at all ability levels (the formula accounts for regression to the mean). Because the simple-difference formula (a) does not take into account regression to the mean, and (b) assumes that the reliability of the intellectual ability and achievement measures and the correlation between them are perfect, the simple-difference method is biased toward finding more ability-achievement discrepancies among children with high ability. The weakness of the predicted-difference method is that, when the correlation between the achievement and ability measures is low (such as <.40), the regression to the mean effect is strong for extremely low or high scores.

As you are aware, requirements vary by school, district, county, state, and/or regions. Therefore, clinicians should carefully consider such requirements when selecting any method of analysis.


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