RIVIER UNIVERSITY

**DIVISION OF EDUCATION**

# **SPECIALIST IN THE ASSESSMENT OF INTELLECTUAL FUNCTIONING PROGRAM**

AND

**ASSOCIATION OF SPECIALISTS IN ASSESSMENT OF**

**INTELLECTUAL FUNCTIONING (ASAIF)**

[**http://www.asaif.net**](http://www.asaif.net)

**Comments on Reports 9/19/16 # 258**

**The ASAIF web site is back up** (but we need new pictures) at [www.asaif.net](http://www.asaif.net)!

**CONTENT**

Kevin McGrew has generously shared a brief (one double-sided sheet), updated listing of Cattell-Horn-Carroll Theory of Cognitive Abilities Definitions at  [http://www.iqscorner.com/2016/06/chc-theory-ability-defintions-v23.html](http://www.iqscorner.com/2016/06/chc-theory-ability-defintions-v23.html%22%20%5Ct%20%22_blank). (Do not correct the spelling in that address.) You can carry around this single sheet of paper until you have it memorized. (Note to ED 658, 659, and 810 students: yes, really.) These are abridged and adapted definitions first published in McGrew (1997). They were subsequently refined by McGrew (2005, 2009), Schneider & McGrew (2012) and McGrew, LaForte & Schrank (2014). More complete definitions can be found in McGrew et al. (2014) and at: [www.iqscorner.com/2014/06/the-chc-taxonomy-of-humancognitive.html](http://www.iqscorner.com/2014/06/the-chc-taxonomy-of-humancognitive.html). Please see also <http://facpub.stjohns.edu/~flanagad/cross-battery/>

**Q** A question from a parent—I have a client who has participated in intensive remediation for a reading disability, and the parent has sent me evaluation results from the initial assessment in February and follow-up assessment in June.  As far as I can tell, alternate forms of these achievement tests were not utilized.  Tests administered include PPVT-IV, DTLA (various editions, depending on the subtest), Woodcock Reading Mastery Tests - III, Slosson Oral Reading R3, GORT (looks like original edition and 4th edition?), amongst others. Any input re: the effects of using the same edition of an achievement test to retest within 4 months? Thanks much.
**A** I think it was Socrates who said that you cannot make chicken salad out of chicken manure.

The remediation may, for all we know, have been stellar and the progress spectacular, but the data provided will not tell us.

Please tell us that the "various editions" of the DTLA did not include any subtests from the historically significant 1935 edition.

The failure to use alternate forms (or failure to state clearly that they actually did so) is troubling.

The GORT-5 was a significant improvement over the GORT-4 (despite

<http://www.proedinc.com/Downloads/13926GORT-5_ExaminerManualPgs8-10_Errata.pdf>), especially because of the change from somewhat content-independent, multiple-guess Comprehension questions to much more content-dependent, open-ended questions.[[1]](#footnote-1)  And, of course, more recent norms are always nice if we want valid scores.

For tests with scoring tables based on spans of several months of age or seasons of grade (e.g., Summerfallwinterspring  [http://www.myschoolpsychology.com/q-and-a-reorganized/#16-reevaluation](http://www.myschoolpsychology.com/q-and-a-reorganized/%22%20%5Cl%20%2216-reevaluation)), there would be all kinds of problems.  On tests that include February and June on the same page of the norms tables (e.g., "Spring of Grade X"), progress would be exaggerated because the pretest in February and the posttest in June would both be compared to norms for April.  However, if the test norms put February in "Winter" and June in "Spring," you would have two slightly inflated scores with February testing compared to perhaps December norms and June testing compared to perhaps early May norms.  For tests using age norms covering a span of months, apparent progress would depend in part on whether both the pretest and posttest were scored on the same page of the norms table.  (If the WRMT-III preserves Richard Woodcock's valuable innovation of both age-based and grade-based norms, then this would not be an issue for that test.)

In your effort to make chicken salad, you would need to review the actual test record forms and the test manuals.  The manuals would tell you whether the student was scored on the same page in the norms tables for pretest and posttest on each instrument and should provide tables of test-retest stability that would allow you to compare the student's growth over four or five months to the average growth for students retested over whatever test-retest interval the test authors used.  However, the average gain in the manual might be based on alternate forms (a popular cost-saving combination of reporting both temporal stability and alternate-form equivalence).  However, the mean scores in the test manual reliability study would be close to a standard score of 100, scaled score of 10, or T score of 50.  Typical growth without remediation might well be much greater for students with low initial scores, simply because of regression toward the mean.

It would also be worthwhile to see how many raw score points were gained.  Raw scores are useless for measurement, but you might find that the alleged growth was only an item or two in some cases, which could temper our enthusiasm.

For tests that offer Item-Response-Theory scores (e.g., *w* scores, Ability Scores, Growth Scores), those would be the way to measure growth (if the test manual provides sufficient information).  The WRMT-III provides Relative Performance Index (RPI) and Growth Scale Values (GSV) scores.  Of course, assessment of short-term progress is the reason we were given curriculum-based assessment. All scores should, of course, be given with 90% or 95% confidence intervals.  If the test manual does not provide information for determining statistical significance of differences, you could at least view with skepticism any growth in which the pretest and posttest confidence intervals overlapped.

Good luck.

**How Can a Person's Reading Score be Higher than Their IQ?**

I looked up my height and weight on a chart for 70-year-old men in the U.S.

My height (67 inches) is in the 25th percentile, equivalent to a standard score of 90. That means that my weight must also be in the 25th percentile (standard score 90) or 164 pounds. You can't pour a quart into a pint bottle, so with 25th percentile height, I must have 25th percentile weight. I must weigh 164 pounds.

Oops, wait, I forgot that height and weight are not perfectly correlated. I looked up a correlation of 0.71 between height and weight. Because of "regression toward the mean," the weight predicted from my height would be closer to the 50th percentile (standard score 100) than is my height.

Okay, my height (standard score 90) is 10 points below the mean (arithmetic average) of 100. I multiply that difference by the correlation: -10 \* 0.71 = -7.1. Then I add -7.1 to 100 and get 92.9 or about 93. My predicted weight is a standard score of 93, not 90. A standard score of 93 is equivalent to a percentile rank of 32. The chart tells me that, for 70-year-old men in the U.S., the 32nd percentile rank is a weight of 169 pounds. You can't pour a quart into a pint bottle, so with 25th percentile height, I must have 32nd percentile weight. I must weigh 169 pounds.

Now I weigh myself and look up my actual weight (206 pounds) on the chart. My actual weight is in the 81st percentile for 70-year-old men, equivalent to a standard score of 113! How can I have a standard score of 113 (percentile rank 81) for weight when my height is only a standard score of 90 (percentile rank 25)?

After more research, I learned that people of the same height have different weights. Some people's weights are lower than we would predict from their height and, some people's weights (like mine) are higher than we would predict from their heights. Pints, quarts, and bottles have nothing to do with it.

It turns out that the same thing is true of IQ and reading. First, the average reading standard score of persons with a particular IQ score will be closer to 100 than is the IQ. The average reading standard score for persons with below-average IQs is higher than their IQ. The average reading standard score of persons with above-average IQs is lower than their IQ. You can see this "regression toward the mean" effect in tables in the manuals for many IQ and academic achievement tests, which show the predicted reading, writing, math, and oral language achievement scores on a particular achievement test for persons with a given IQ on a particular IQ test.

Second, half of people with a particular IQ score on an IQ test will score higher than the predicted achievement score and half of them will score lower. Most folks will score fairly close to the predicted score, some will score farther from the prediction, and a few will score a lot higher or lower than the prediction. Pints, quarts, and bottles are still irrelevant.

Notes:

1. The IQ and standard scores referenced above (there are different kinds) have an average (mean) of 100 and a "standard deviation" of 15, which means that the scores of most people (about 68 percent of them) are between 85 and 115 and about half are between 90 and 110. Standard scores are equal units, so you can add and subtract them.

2. Percentile ranks tell the percentage of persons who scored the same as or lower than you did. For example, my percentile rank of 25 for height means that I am as tall as or taller than 25 percent of American men my age and shorter than the other 75 percent. Percentile ranks are not equal units, so we cannot do math with them.

 Standard

 Score or IQ 60 65 70 75 80 85 90 100 105 110 115 120 125 130 135 140

 Percentile Rank 0.4 1 2 5 9 16 25 50 63 75 84 91 95 98 99 99.6

3. We have known about regression toward the mean for a long time. Just ask Francis Galton (Regression towards mediocrity in hereditary stature. *Journal of the Anthropological Institute, 15*, 246-263 [1886]).

4. For much better explanations than mine, please see Kevin McGrew's "A lesson from Forrest Gump regarding expectations for students with cognitive disabilities" (<http://www.myschoolpsychology.com/special-education-links-2-2/#intellectual-and-developmental-disabilities>, <http://www.iapsych.com/iqach.pdf>, and <http://www.slideshare.net/iapsych/forrest-gump-and-iq-expectations>) and W. Joel Schneider's <https://assessingpsyche.wordpress.com/2013/12/28/potential-misconceptions-about-potential/>

5. Yes, following Shakespeare, Prof. Anne Curzan, and others, I am using the singular "their."

**STYLE**

Don’t write merely to be understood. Write so that you cannot possibly be misunderstood.

 – Robert Louis Stevenson

It is helpful to shove modifiers as close as possible to whatever they are attempting to modify.

*Dr. Dwibble noted that Siouxanne had difficulty using correct grammar and spelling in the psychological report.*

I think that, if a student has difficulty with grammar and spelling, it is unwise to allow the student to write the psychological report. The following versions of the sentence might be clearer.

*Dr. Dwibble noted that Siouxanne had difficulty using correct grammar and spelling.*

*In the psychological report, Dr. Dwibble noted that Siouxanne had difficulty using correct grammar and spelling.*

*Dr. Dwibble noted in the psychological report that Siouxanne had difficulty using correct grammar and spelling.*

**LAW**

Be sure to check Guy McBride's *What's New* page at <http://www.myschoolpsychology.com/>

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1. Sue Morbey and Melissa Farrall each became suspicious of one of their examinees' high Comprehension scores on GORT-4 passages the student was barely able to read. Sue and Melissa each decided to retest her student on the alternate form, reading the introductory sentence for each story (e.g., "Read this story to learn why the blue jay died of thirst.") to the student, but never letting the student see the story at all. In both cases, the student's comprehension score was about the same on both forms. The changes in the GORT-5 are indeed important. For a less clear and direct demonstration, please see also Keenan, J. M. & Betjemann, R. S. (2006). Comprehending the Gray Oral Reading Test without reading it: Why comprehension tests should not include passage-independent items. *Scientific Studies of Reading, 10*(4), 363-380. [↑](#footnote-ref-1)