Technical Report #3

Using the WASI®–II with the WISC®–V

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Purpose

This technical report provides information relevant to using the Wechsler Abbreviated Scale of Intelligence–Second Edition (WASI–II; Wechsler, 2011) with the Wechsler Intelligence Scale for Children–Fifth Edition *(*WISC–V; Wechsler, 2014). Prior and current research indicates a reasonable estimate of an examinee's WISC–V Full Scale IQ (FSIQ) can be obtained from the WASI–II FSIQ–4 Subtests (FSIQ–4). If a comprehensive cognitive assessment is necessary after WASI–II testing is complete, WASI–II subtest scores can be substituted for the corresponding WISC–V subtest scores when deriving WISC–V composite scores.

Introduction

A variety of recent changes in the field of psychological testing have placed constraints on the time available to engage in assessment. For example, the assessment of specific learning disabilities has become increasingly multifaceted, resulting in various new demands on the time and attention of school psychologists. Modified insurance reimbursement rates also affect the time that practitioners in other settings can devote to testing. The increasing need for efficiency creates a demand for short and reliable measures of cognitive ability.

In some settings, practitioners routinely administer a cognitive ability screener or a short form of a comprehensive intelligence test (e.g., a scale that provides two verbal and two nonverbal ability subtests) screen for cognitive issues. A more comprehensive cognitive ability test may be administered if screening results indicate more testing is warranted. The WASI–II, an abbreviated cognitive ability test for assessing intelligence for ages 6–90 years, is regularly used with the Wechsler Intelligence Scale for Children–Fourth Edition (WISC–IV), and now the WISC–V, in this manner. The WASI–II was developed to provide quick and accurate estimates of intellectual functioning for screening and reevaluation purposes. It meets the need for a short and reliable measure of intelligence in clinical, psychoeducational, and research settings. The scale consists of four subtests: Vocabulary, Similarities, Block Design, and Matrix Reasoning. The subtests are scaled to a *T*-score metric. The WASI–II provides four composite scores: the

Verbal Comprehension Index (VCI), the Perceptual Reasoning Index (PRI), the Full Scale IQ–2 Subtest (FSIQ–2), and the Full Scale IQ–4 Subtest (FSIQ–4).

Based upon the established relations between the WASI–II and the WISC–IV, the two scales are commonly used together for two additional purposes. First, an examinee's WASI–II FSIQ–4 can be used to give a reasonable indication of the range within which his or her WISC–IV FSIQ is likely to fall (i.e., WISC FSIQ prediction). Second, if a comprehensive cognitive assessment is needed after WASI–II testing is complete, WISC–IV composite scores can be derived using WASI–II subtest scores that are substituted for the corresponding WISC–IV subtest scores to reduce testing time and repeated administration effects (i.e., WASI–II substitution). This technical report examines the relations of the WASI–II and the WISC–V and provides data to support the continued practices of WISC FSIQ prediction and WASI–II substitution.

Correlations of the WASI–II and the WISC–V

A sample of examinees was administered the WISC–V then the WASI–II between March, 2013 and February, 2014. The WASI–II and the WISC–V have only four subtests in common, and there are no shared items across the WASI–II and the WISC–V subtests. Therefore, correlations were expected to be moderate, similar to those observed in the analogous WASI–II/WISC–IV study (Wechsler, 2011). According to the Flynn effect and because more examinees were administered the WISC–V before the WASI–II, the WISC–V FSIQ was expected to be lower than the WASI–II FSIQ–4.

The demographics and testing interval data for this sample are shown in Table 1, and the correlations between the WISC–V and the WASI–II are presented in Table 2. To facilitate comparison with the WISC–V, the scaled-score equivalents of the WASI–II subtest *T* scores are shown.

Table 1. Demographic and Testing Interval Data for the WASI–II and WISC–V Validity Study

N	43
Testing Interval	
Mean	28.6
Range	15.5
Age	
Range	6–16
Mean	11.4
SD	3.1
Sex	
Female	41.9
Male	58.1
Race/Ethnicity	
African American	16.3
Asian	14.0
Hispanic	11.6
White	53.5
Other	4.7

Parent Education	
≤11 years	2.3
12 years	25.6
13–15 years	30.2
≥16 years	41.9
Region	
Midwest	9.3
Northeast	25.6
South	46.5
West	18.6

Table 2. WISC–V and WASI–II Correlations

	WISC–V		WASI–II				
Score	**Mean**	***SD***	**Mean**	***SD***	***N***	***r***	**Corrected *r***
Similarities	10.7	2.8	10.9	2.8	43	.58	.61
Vocabulary	10.4	2.5	10.8	2.4	41	.74	.80
Block Design	10.3	3.0	11.9	3.0	43	.60	.60
Matrix Reasoning	10.7	2.5	11.9	2.4	39	.46	.53
WISC–5 FSIQ/ WASI–II FSIQ–4	104.3	11.8	107.3	13.4	41	.81	.87

The WISC–V FSIQ and WASI–II FSIQ–4 means are in the average range. As expected, the mean WISC–V FSIQ is lower than the mean WASI–II FSIQ–4. This was as anticipated because of (1) the Flynn effect (although only three years passed between publication of the two instruments), (2) the effects of procedural learning because only one testing order was used, and (3) the tendency for short forms to produce slightly inflated scores relative to comprehensive instruments. The corrected correlation coefficients of corresponding subtest pairs and of the two FSIQ scores are moderately high and are all statistically significant. The correlations are somewhat attenuated relative to past studies with other versions of the WASI and WISC (Pearson, 1999; Wechsler, 2003, 2011) because the current sample was small relative to those of prior studies and the use of only one testing order. However, the results are within the expected ranges and suggest that the subtests and the FSIQ–4 measure similar constructs to those measured by their WISC–V counterparts. The relations also are consistent with those observed between prior versions of the two scales, which suggests that the two tests may be used together with results comparable to the WASI–II/WISC–IV.

WISC FSIQ Prediction

Table 3 presents the expected ranges for WISC–V FSIQ scores given various WASI–II FSIQ–4 scores at the 90% and 68% levels of confidence. Using this table, practitioners can obtain a reasonable indication of an examinee's FSIQ on the WISC–V based on the WASI–II FSIQ–4. Locate the examinee's WASI–II FSIQ–4 in the left column and read across the row to the column corresponding to the desired confidence level to obtain the expected range of the WISC–V FSIQ. For example, if an examinee obtained a WASI–II FSIQ–4 of 82, his or her observed WISC–V FSIQ would be within the range of 80–84 with 90% confidence and of 81–83 with 68% confidence.

The ranges of expected WISC–V FSIQ scores were created using the mean equating method based on the data from the aforementioned sample of examinees who took both the WASI–II and the WISC–V. The WASI–II mean FSIQ–4 was adjusted for the Flynn effect and to account for the procedural learning effect that was present because only one testing order was used. Because the correlation coefficient between the FSIQ scores of the two tests is high, the WASI–II FSIQ–4 shares 76% of the variance with the WISC–V FSIQ. As a result, the ranges of expected FSIQs with a 68% confidence interval are generally within 3–4 points, while the ranges at the 90% confidence interval are slightly larger.

Table 3. WISC–V FSIQ Expected Score Ranges for Various WASI–II FSIQ–4 Scores

WASI–II FSIQ	WISC–V FSIQ 90%	WISC–V FSIQ 68%	WASI–II FSIQ	WISC–V FSIQ 90%	WISC–V FSIQ 68%	WASI–II FSIQ	WISC–V FSIQ 90%	WISC–V FSIQ 68%
40	40[a]–45	40[a]–43	80	78–82	78–81	120	118–121	119–121
41	40[a]–46	40[a]–44	81	79–83	79–82	121	119–123	120–122
42	40[a]–47	40[a]–45	82	80–84	81–83	122	120–124	121–123
43	40[a]–48	40–46	83	81–85	82–84	123	121–125	122–124
44	40[a]–49	41–47	84	82–86	83–85	124	122–126	123–125
45	40–50	42–48	85	83–87	84–86	125	123–127	124–126
46	41–51	43–49	86	84–88	85–87	126	124–128	125–127
47	42–52	44–50	87	85–89	86–88	127	125–129	126–128
48	43–52	45–51	88	86–90	87–89	128	126–130	126–129
49	44–53	46–52	89	87–90	88–90	129	127–131	127–130
50	45–54	47–53	90	88–91	89–91	130	127–132	128–131
51	46–55	48–54	91	89–92	90–92	131	128–133	129–132
52	47–56	49–54	92	90–93	91–93	132	129–134	130–133
53	49–57	50–55	93	91–94	92–94	133	130–135	131–134
54	50–58	51–56	94	92–95	93–95	134	131–136	132–135
55	51–59	52–57	95	93–96	94–96	135	132–137	133–136
56	52–60	53–58	96	95–97	95–97	136	133–139	134–137
57	53–61	54–59	97	96–98	96–98	137	134–140	135–139
58	54–62	55–60	98	97–99	97–99	138	135–141	136–140
59	55–63	56–61	99	98–100	98–100	139	136–142	137–141
60	56–64	58–62	100	99–101	99–101	140	137–143	138–142
61	57–64	59–63	101	100–102	100–101	141	138–144	139–143
62	58–65	60–64	102	101–103	101–102	142	139–145	140–144
63	59–66	61–65	103	102–104	102–103	143	140–146	141–145
64	60–67	62–66	104	103–105	103–104	144	140–147	142–146
65	61–68	63–67	105	104–106	104–105	145	141–148	143–147
66	63–69	64–68	106	105–107	105–106	146	142–149	144–148
67	64–70	65–69	107	106–108	106–107	147	143–150	145–149
68	65–71	66–70	108	107–109	107–108	148	144–151	146–150
69	66–72	67–71	109	108–110	108–110	149	145–153	147–151
70	67–73	68–72	110	109–111	109–111	150	146–154	147–152
71	68–74	69–73	111	110–112	110–112	151	147–155	148–153
72	69–75	70–74	112	111–113	111–113	152	148–156	149–154
73	70–76	71–74	113	112–114	112–114	153	149–157	150–155
74	71–76	72–75	114	112–115	113–115	154	150–158	151–156
75	72–77	73–76	115	113–116	114–116	155	151–159	152–157
76	73–78	74–77	116	114–117	115–117	156	152–160	153–158
77	74–79	75–78	117	115–118	116–118	157	152–160[a]	154–159
78	75–80	76–79	118	116–119	117–119	158	153–160[a]	155–160[a]
79	76–81	77–80	119	117–120	118–120	159	154–160[a]	156–160[a]
						160	155–160[a]	157–160[a]

[a] The range is truncated due to the range of obtainable index scores.

WASI–II Substitution

Two issues may arise when a cognitive ability screener is administered before a comprehensive intelligence test because similar content typically appears on both measures. First, valuable time is devoted to administering subtests that are similar to those already administered in the screener. Second, the practitioner must interpret the comprehensive test results with caution because the scores from subtests similar to the screening test can be impacted by various factors, such as:

- *procedural learning* (i.e., the acquisition of knowledge or experience, relevant to a strategy or procedure, that can be used to improve performance on a particular task);
- *variation in examinee effort* (perhaps due to boredom or discouragement because a similar task was already administered);
- *regression to the mean* (e.g., the tendency for extreme observations upon first testing to be closer to the mean upon second testing); or
- *the Flynn effect* (i.e., older norms produce inflated scores on intelligence measures; Flynn, 1987, 1999, 2007).

Although the last three factors are fundamental to the nature of testing and psychometric properties of the instruments selected, the first factor—procedural learning—can be controlled and reduced by choosing an administration procedure that is less vulnerable to its effects. Procedural learning effects have more pertinence to and influence on visual spatial and fluid reasoning domain subtests during readministration (Basso, Carona, Lowery, & Axelrod, 2002; Heaton et al., 2001; Ryan, Glass, & Bartels, 2010). In addition, repeated testing with the same manipulatives may further inflate scores on subtests in the second testing. For example, the WISC–V test–retest data indicated that the average rise in scaled-score points and effect sizes from the first to the second testing for Block Design tended to be larger than those observed for Vocabulary or Similarities (Wechsler, 2014). Although these retest data also are influenced by item practice effects because the items are identical, the relatively larger rise in Block Design scores suggests an additive influence of repeated administration effects. Specifically, as the examinee completes the easier items on Block Design, he or she acquires knowledge of how to construct certain portions of designs (e.g., a triangle shape in a design can be constructed by aligning the half-red sides of a surface of two blocks) that are also present in the designs on later items. This knowledge of construction procedures may then allow the examinee to obtain higher scores upon retest by constructing designs more quickly or accurately. The same type of knowledge is not acquired on Similarities or Vocabulary items. For retest studies, item practice effects are more likely to be an issue for Similarities, Vocabulary, and Block Design because the examinee may recall items and research or learn correct responses prior to the second administration of Similarities and Vocabulary, or he or she may recall how to build portions of designs for Block Designs (i.e., procedural learning).

Procedural learning effects may exist when a comprehensive measure with similar subtests is administered after a screening measure. For instance, when the WASI–II is administered before the WISC–V, procedural learning may inflate scores on the corresponding WISC–V subtests. However, if the results from the screening measure can be substituted for the comparable subtest scores on the comprehensive measure, the need to readminister subtests with strong resemblance can be eliminated and potential score inflation due to procedural learning can be avoided.

In practice, the WASI–II can be administered as the initial cognitive ability test. When additional assessment is necessary, the WISC–V may be administered, and the four WASI–II subtest scores may substitute for the corresponding WISC–V subtest scores when deriving composite scores (i.e., WASI–II substitution). For example, the WASI–II Similarities *T* score can be converted to a scaled score and substituted for the WISC–V Similarities scaled score in composite score calculations, eliminating the need to administer the WISC–V Similarities subtest. This solution reduces WISC–V administration time (the administration time for the four WISC–V subtests that have counterparts in the WASI–II is approximately 30 minutes) and helps to maintain examinee–examiner rapport and examinee effort. In addition, it frees up additional time that the practitioner can use to assist the examinee through other clinical, psychoeducational, and assessment activities.

To facilitate the practice of WASI–II substitution, important features in creating alternate forms of a test (i.e., content sampling, range and difficulty level of items, instructions, sample items, and presentation format; Anastasi & Urbina, 1997) were emphasized during WASI–II subtest development. The four subtests were chosen for their strong association with general cognitive abilities (Kamphaus, 1993; Kaufman & Lichtenberger, 2005; Sattler, 2008; Wechsler, 2011, 2014) and for their representativeness of important intelligence constructs such as the verbal/performance and crystallized/fluid dichotomies.

New items added to extend the subtest score range in the WASI–II were subjected to extensive expert reviews based on several criteria, including similarity to the related items on the comprehensive measures, difficulty, ease of scoring, and bias. Outdated items and items that were of duplicate difficulty were deleted to shorten the administration time required. WASI–II administration procedures were also updated to be more consistent with those in the comprehensive Wechsler intelligence scales. These procedures yielded WASI–II subtests comprising items that differ from, but are parallel to, items in the corresponding WISC–V subtests. The range and level of difficulty of the items are comparable, as are the instructions, sample items, and presentation format.

Effects of WASI–II Substitution

Zhou and Raiford (2011) presented evidence on the effectiveness of the WASI–II substitution method. A sample of examinees was administered the WASI–II then the WISC–IV. Comparisons were conducted between (a) WISC–IV composite scores derived with WASI–II substitution relative to (b) WISC–IV composite scores derived with proration (i.e., composite scores were derived by omitting various combinations of subtests iteratively and prorating the relevant sums of scaled scores). Relative to the traditionally-derived WISC–IV composite scores of this sample, the WISC–IV composite scores derived with substitution were lower. This implies the traditionally-derived scores were inflated due to repeated administration effects. Zhou and Raiford (2011) also compared (a) WISC–IV composite scores of a matched control sample that was *not* administered WASI–II subtests before the WISC–IV to (b) scores derived with WASI–II substitution or (c) scores derived with proration. WASI–II substitution was more accurate than proration. WASI–II substitution was more accurate for the WISC–IV FSIQ than for the VCI or the PRI, most likely because the percentages of subtests substituted were higher for index scores than for the FSIQ. These results expanded on similar findings (Zhu, Tulsky, Vasquez, & Pike, 1999) from studies of the original WASI with the Wechsler Intelligence Scale for Children–Third Edition (WISC–III; Wechsler, 1991).

Zhou and Raiford (2011) cautioned that there are some limitations which may impact interpretation and generalizability of results. For example, discrepancies between WISC–IV composite scores derived with WASI–II substitution and traditionally-derived WISC–IV composite scores may have occured because the sample used to evaluate substitution took the full WASI–II and WISC–IV. In addition, when the discrepancies were presented by ability level, the sample sizes were relatively small in each ability group. Prior research has demonstrated that retest value gains vary according to ability level (Rapport, Brines, Axelrod, & Theisen, 1997). Therefore, it is possible that WASI–II substitution results could differ by ability level. Furthermore, the research samples were composed of nonclinical examinees only, so the results may not generalize to clinical populations.

The strong relations between the WISC–V and the WASI–II that are established in Tables 2 and 3 of this report indicate that WASI–II substitution remains a best practice consideration for joint use of the two scales that balances accuracy and efficiency. The similarities between the results and those of the WASI–II/WISC–IV study also support this conclusion.

Procedures for WASI–II Substitution

Subtest Administration Order

Table 4 presents the source of the subtest (i.e., WASI–II or WISC–V) and the subtest administration order to be used when various WISC–V composite scores will be derived with WASI–II substitution. The administration order of the remaining WISC–V subtests should follow the subtest order on the WISC–V Record Form. In order to establish rapport with the examinee before the administration of the WISC–V, the examiner may engage the examinee in a relaxing or fun task prior to starting with Digit Span.

Table 4. Subtest Administration Order When Using WASI–II Substitution

		WISC–V Composite Score							
Subtest Order	**Source**	**FSIQ**	**VCI**	**VSI**	**FRI**	**WMI**	**PSI**	**NVI**	**GAI**
Block Design	WASI–II	✓		✓				✓	✓
Vocabulary	WASI–II	✓	✓						✓
Matrix Reasoning	WASI–II	✓			✓			✓	✓
Similarities	WASI–II	✓	✓						✓
Digit Span	WISC–V	✓				✓			
Coding	WISC–V	✓					✓	✓	
Figure Weights	WISC–V	✓			✓			✓	✓
Visual Puzzles	WISC–V			✓				✓	
Picture Span	WISC–V					✓		✓	
Symbol Search	WISC–V						✓		

Testing Interval

Minimizing the time that elapses between administration of the WASI–II and the remaining WISC–V subtests is recommended as best practice. Intervening events in the examinee's life and cognitive developmental changes between administration of the WASI–II and the remaining WISC–V subtests may decrease consistency of results and increase difficulty in interpretation. However, it is left to the clinical judgment of the practitioner to determine whether the testing interval is appropriate, given the examinee's situation.

Using WASI–II Scaled Scores to Derive WISC–V Composite Scores

WASI–II Substitution for the WISC–V traditional version (paper)

Step 1. Converting WASI–II *T* Scores to Scaled Scores

To convert *T* scores to scaled scores, use Table A.2 in the WASI–II Manual. For each WASI–II subtest, locate the examinee's *T* score. Read across the row to the Scaled Score column to obtain the converted scaled score.

Step 2. Recording WASI–II Converted Scaled Scores on the WISC–V Record Form

On the front page of the WISC–V Record Form, locate the Total Raw Score to Scaled Score Conversion table on the Summary page. To ensure that it is clear to others who may access records in the future that the composite scores were derived with WASI–II substitution, do not record the WASI–II subtest total raw scores. Record only the WASI–II subtest scaled scores in the Verbal Comp., Visual Spatial, Fluid Reas., and Full Scale columns in every unshaded box to the right of the Raw Score column. For example, the WASI–II Matrix Reasoning converted scaled score is entered in the columns labeled Fluid Reas. and Full Scale. For any relevant ancillary index score (i.e., Nonverbal Index or General Ability Index), record the WASI–II subtest scaled scores in the Sum of Scaled Scores table on the Ancillary and Complementary Analysis page. Clearly indicate above the Total Raw Score to Scaled Score Conversion table that the composite scores were derived with WASI–II substitution by noting, for example, "WASI–II converted subtest scores used for BD, SI, MR, and VC subtest scaled scores." Examiners may wish to mark through the Block Design, Similarities, Vocabulary, and Matrix Reasoning sections of the WISC–V Record Form as a reminder not to administer those WISC–V subtests. If possible, attach the WASI–II Record Form to the WISC–V Record Form after the WISC–V has been administered and scored.

Step 3. Completing the WISC–V Record Form Summary Page

After the WASI–II converted subtest scaled scores have been recorded, refer to the Completing the Summary Page section (beginning on page 56) and the Completing the Ancillary and Complementary Analysis Page section (beginning on page 69) of Chapter 2 in the WISC–V Administration and Scoring Manual to finish calculating the desired WISC–V composite scores.

WASI–II Substitution for the WISC–V Score Report on Q-interactive

If the WISC–V was administered on Q-interactive™ (Pearson's digital tablet-based administration and scoring system) WASI–II substitution can be used to derive composite scores. However, the Q-interactive score report only generates the composite scores that did not include the substituted WASI–II subtests. The Support tab on Q-central (i.e., Q-interactive's online information repository) contains digitally-accessible versions of the WISC–V Administration and Scoring Manual and the WISC–V Administration and Scoring Manual Supplement. Using the same method described for the traditional version, these manuals can be used to hand-calculate the relevant composite scores and comparisons that the score report does not generate. The score report, if generated in Word, can be altered by entering the subtest and composite scores generated by WASI–II substitution in the appropriate tables and making a notation similar to that described for the paper Record Form in Step 2 to indicate WASI–II substitution was used.

WASI–II Substitution for the WISC–V Score Report on Q-global

When WASI–II substitution is used to derive WISC–V composite scores on Q-global™ (Pearson's online scoring and reporting platform) it is necessary to derive a total raw score equivalent for each substituted subtest to enter into Q-global. Table 5 provides total raw score equivalents by age for this purpose. Locate the section in Table 5 that corresponds to the examinee's age at testing. Find the *T* score in the extreme left or right column and read across the row to the relevant WASI–II subtest to obtain the equivalent WISC–V total raw score. Repeat this process for each of the four WASI–II subtests.

In Q-global, enter the equivalent WISC–V total total raw scores obtained from Table 5 for each of the four subtests. Clearly indicate in the final report that WASI–II substitution was used by noting, for example, "WASI–II converted scores used for BD, SI, MR, and VC subtest scaled scores."

Conclusion

Although it is best practice to administer the full WISC–V if the WASI–II has not been administered, WASI–II substitution is recommended as a best practice consideration due to repeated administration effects, particularly if the WASI–II has been administered relatively recently (i.e., within 2–12 weeks prior to WISC–V administration). If the practitioner is concerned that repeated administration effects continue to impact performance after longer intervals (e.g., 6 months), WASI–II substitution might be utilized with more caution in these cases. These concerns will vary across ability level and across individuals, as will intervening events and cognitive development between administration of the WASI–II and the WISC–V. Therefore, the practitioner should use clinical judgment in determining if substitution is appropriate in the examinee's individual case. In cases where WASI–II substitution is utilized, it is recommended that practitioners specify which WISC–V composite scores were derived with WASI–II substitution in the assessment report.

Table 5. WISC–V Subtest Total Raw Score Equivalents for WASI–II *T* Scores for Entry on Q-global

T Score	Ages 6:0–6:3				Ages 6:4–6:7				Ages 6:8–6:11				*T* Score
	SI	VC	BD	MR	SI	VC	BD	MR	SI	VC	BD	MR	
20–21	0	1	0	0	0	1	0	0	1	1	0	0	20–21
22–24	1	2	1	1	1	2	1	1	2	3	1	1	22–24
25–28	2	3	1	2	2	4	1	2	3	4	2	3	25–28
29–31	3	5	2	3	4	5	2	3	5	6	3	4	29–31
32–34	5	6	3	4	6	7	3	5	7	7	4	6	32–34
35–38	7	8	5	5	8	9	5	6	9	9	6	7	35–38
39–41	9	9	7	6	10	10	7	8	11	11	8	9	39–41
42–44	11	10	9	8	12	11	10	9	13	12	11	10	42–44
45–48	12	12	11	9	14	13	12	10	15	14	13	11	45–48
49–51	14	13	13	11	16	14	15	12	17	15	16	13	49–51
52–54	16	14	16	12	18	15	17	13	19	16	19	14	52–54
55–58	18	16	19	13	20	17	20	14	21	18	22	15	55–58
59–61	20	18	22	15	21	19	23	16	22	20	25	17	59–61
62–64	21	20	25	16	22	21	26	17	23	22	28	18	62–64
65–68	23	22	28	17	23	23	29	18	25	24	30	19	65–68
69–71	24	24	31	18	25	25	32	19	26	26	33	20	69–71
72–74	26	27	34	19	27	28	35	20	28	29	36	21	72–74
75–78	28	29	37	20	29	30	38	21	30	31	39	22	75–78
79–80	38	43	49	27	38	43	49	27	39	44	50	28	79–80

T Score	Ages 7:0–7:3				Ages 7:4–7:7				Ages 7:8–7:11				*T* Score
	SI	VC	BD	MR	SI	VC	BD	MR	SI	VC	BD	MR	
20–21	1	1	0	1	1	1	0	1	1	1	0	1	20–21
22–24	2	3	1	2	3	4	1	3	4	4	1	4	22–24
25–28	4	5	2	4	5	5	3	4	6	6	3	5	25–28
29–31	6	6	4	5	7	7	5	6	8	8	5	7	29–31
32–34	8	8	6	7	9	9	7	7	10	10	7	8	32–34
35–38	10	10	8	8	11	11	9	9	12	12	10	10	35–38
39–41	12	11	10	9	13	12	11	10	14	13	12	11	39–41
42–44	14	13	12	11	15	14	13	12	16	15	14	12	42–44
45–48	16	15	14	12	17	16	16	13	19	17	17	14	45–48
49–51	18	16	17	14	19	17	18	14	20	18	19	15	49–51
52–54	20	17	20	15	20	18	21	16	22	19	22	16	52–54
55–58	21	19	23	16	22	20	24	17	23	21	25	18	55–58
59–61	22	21	26	17	24	22	27	18	25	23	28	19	59–61
62–64	24	23	29	19	25	24	30	19	26	25	31	20	62–64
65–68	26	25	32	20	27	26	33	21	28	27	34	21	65–68
69–71	28	27	35	21	29	28	36	22	30	29	37	22	69–71
72–74	30	30	38	22	31	31	39	23	31	32	40	23	72–74
75–78	31	32	40	23	33	33	41	24	33	34	43	24	75–78
79–80	39	44	50	28	40	45	51	29	40	45	51	29	79–80

Table 5. WISC–V Subtest Total Raw Score Equivalents for WASI–II *T* Scores for Entry on Q-global (*continued*)

T Score	Ages 8:0–8:3				Ages 8:4–8:7				Ages 8:8–8:11				*T* Score
	SI	VC	BD	MR	SI	VC	BD	MR	SI	VC	BD	MR	
20–21	1	2	1	1	2	2	1	2	2	2	1	2	20–21
22–24	4	5	2	4	5	5	2	5	5	6	3	5	22–24
25–28	7	7	4	6	7	8	4	6	8	9	5	7	25–28
29–31	9	9	6	7	10	10	7	8	11	11	7	8	29–31
32–34	11	11	8	9	12	12	9	9	13	13	9	10	32–34
35–38	13	13	10	10	14	14	11	11	15	15	12	11	35–38
39–41	15	14	12	12	16	15	13	12	17	16	15	13	39–41
42–44	17	16	15	13	18	17	16	14	19	18	18	14	42–44
45–48	20	18	18	14	21	19	19	15	21	20	20	16	45–48
49–51	21	19	21	16	22	20	23	16	23	22	24	17	49–51
52–54	23	20	24	17	24	22	26	18	24	24	27	18	52–54
55–58	24	22	27	18	25	24	29	19	26	26	30	19	55–58
59–61	26	24	30	20	27	26	32	20	28	28	33	21	59–61
62–64	27	26	33	21	28	28	35	21	29	30	36	22	62–64
65–68	29	28	36	22	30	30	37	22	31	32	38	23	65–68
69–71	31	30	39	23	31	32	40	23	33	34	41	24	69–71
72–74	32	33	41	24	33	34	43	24	34	36	44	25	72–74
75–78	33	35	44	25	34	36	45	25	36	38	46	26	75–78
79–80	40	46	52	29	41	46	52	29	42	47	53	30	79–80

T Score	Ages 9:0–9:3				Ages 9:4–9:7				Ages 9:8–9:11				*T* Score
	SI	VC	BD	MR	SI	VC	BD	MR	SI	VC	BD	MR	
20–21	2	3	1	2	2	3	1	2	2	3	1	3	20–21
22–24	5	7	4	6	6	8	4	6	6	8	4	7	22–24
25–28	8	10	6	7	9	11	6	8	9	11	7	9	25–28
29–31	11	12	8	9	12	13	9	10	12	13	10	11	29–31
32–34	13	14	10	11	14	14	12	12	15	15	13	12	32–34
35–38	15	15	13	12	16	16	15	13	17	17	16	13	35–38
39–41	18	17	16	13	18	18	18	14	19	19	18	15	39–41
42–44	20	19	19	15	20	20	20	16	21	21	21	16	42–44
45–48	22	21	21	16	22	22	22	17	23	23	23	17	45–48
49–51	23	23	24	17	24	24	25	18	25	25	26	18	49–51
52–54	25	25	27	19	26	26	28	19	27	27	29	20	52–54
55–58	27	27	30	20	28	28	31	20	29	29	32	21	55–58
59–61	29	29	33	21	30	30	34	22	31	31	34	22	59–61
62–64	30	31	36	22	32	32	37	23	32	33	37	23	62–64
65–68	32	33	38	23	33	34	39	24	34	35	39	24	65–68
69–71	33	35	41	24	35	36	42	25	36	37	42	25	69–71
72–74	35	37	44	25	36	38	44	26	37	39	45	26	72–74
75–78	36	39	47	26	37	40	47	28	38	41	48	27	75–78
79–80	42	47	53	30	42	48	53	30	43	48	54	30	79–80

Table 5. WISC–V Subtest Total Raw Score Equivalents for WASI–II *T* Scores for Entry on Q-global (*continued*)

T Score	Ages 10:0–10:3				Ages 10:4–10:7				Ages 10:8–10:11				*T* Score
	SI	VC	BD	MR	SI	VC	BD	MR	SI	VC	BD	MR	
20–21	3	4	2	3	3	4	2	3	3	4	3	3	20–21
22–24	7	9	6	7	7	9	6	7	8	9	7	7	22–24
25–28	10	12	9	9	10	12	10	9	11	12	10	9	25–28
29–31	13	14	12	11	13	14	13	11	14	15	13	11	29–31
32–34	15	16	15	12	16	16	16	12	17	17	16	13	32–34
35–38	17	18	18	13	18	19	18	14	19	19	19	14	35–38
39–41	20	20	20	15	21	21	21	15	21	21	22	15	39–41
42–44	22	22	22	16	23	23	23	16	23	23	25	17	42–44
45–48	24	24	24	17	25	25	25	18	25	26	27	18	45–48
49–51	26	26	27	19	26	27	27	19	27	28	29	19	49–51
52–54	28	28	30	20	28	29	30	20	29	30	32	21	52–54
55–58	29	30	33	21	30	31	33	21	30	31	35	22	55–58
59–61	31	32	35	22	32	33	36	22	32	33	37	23	59–61
62–64	33	34	38	23	33	35	39	23	34	35	40	24	62–64
65–68	34	36	40	24	35	37	41	24	36	37	42	25	65–68
69–71	36	38	43	25	37	39	44	25	38	39	45	26	69–71
72–74	38	40	46	26	39	41	47	26	40	41	48	27	72–74
75–78	39	42	49	27	40	43	49	27	41	43	50	29	75–78
79–80	43	49	54	30	44	49	55	30	44	49	55	30	79–80

T Score	Ages 11:0–11:3				Ages 11:4–11:7				Ages 11:8–11:11				*T* Score
	SI	VC	BD	MR	SI	VC	BD	MR	SI	VC	BD	MR	
20–21	3	4	3	3	4	4	3	3	4	4	3	3	20–21
22–24	9	10	7	7	9	10	7	8	10	10	7	8	22–24
25–28	12	13	10	10	13	13	11	10	13	13	11	11	25–28
29–31	15	15	13	11	16	16	14	12	16	16	14	12	29–31
32–34	18	18	16	13	19	18	17	13	19	19	17	14	32–34
35–38	20	20	19	14	21	20	20	14	22	21	20	15	35–38
39–41	22	22	22	16	23	23	23	16	23	23	23	16	39–41
42–44	24	24	25	17	25	25	25	17	25	26	26	18	42–44
45–48	26	26	28	18	27	27	28	19	27	28	29	19	45–48
49–51	28	28	30	20	28	29	31	20	29	30	32	20	49–51
52–54	29	30	33	21	30	31	34	21	31	32	35	21	52–54
55–58	31	32	36	22	32	33	37	22	32	34	38	22	55–58
59–61	33	34	38	23	33	35	39	23	34	36	41	23	59–61
62–64	34	36	41	24	35	37	42	24	35	37	43	24	62–64
65–68	36	38	44	25	36	39	45	25	37	39	45	25	65–68
69–71	38	40	47	26	38	41	47	26	39	41	47	26	69–71
72–74	40	42	49	27	40	43	49	27	41	43	49	27	72–74
75–78	41	44	51	28	41	45	51	28	42	45	51	28	75–78
79–80	44	50	55	31	44	50	55	31	45	50	55	31	79–80

Table 5. WISC–V Subtest Total Raw Score Equivalents for WASI–II *T* Scores for Entry on Q-global (*continued*)

T Score	Ages 12:0–12:3				Ages 12:4–12:7				Ages 12:8–12:11				*T* Score
	SI	VC	BD	MR	SI	VC	BD	MR	SI	VC	BD	MR	
20–21	4	4	3	3	4	5	3	3	4	5	3	4	20–21
22–24	10	11	7	8	10	11	7	8	11	11	8	9	22–24
25–28	14	14	11	11	14	14	11	11	14	14	11	11	25–28
29–31	17	17	14	12	17	17	14	12	17	17	15	12	29–31
32–34	20	19	17	14	20	20	17	14	20	20	18	14	32–34
35–38	22	21	20	15	22	22	20	15	22	22	22	15	35–38
39–41	24	24	23	16	25	24	24	17	25	25	25	17	39–41
42–44	26	26	26	18	27	27	27	18	27	27	28	18	42–44
45–48	28	28	29	19	29	29	30	19	29	30	31	19	45–48
49–51	30	31	33	20	30	31	33	20	31	32	34	20	49–51
52–54	31	33	36	21	32	33	36	21	32	34	36	21	52–54
55–58	33	35	38	22	33	35	38	22	34	36	39	22	55–58
59–61	35	36	41	23	35	37	41	24	35	38	42	24	59–61
62–64	36	38	44	24	36	39	44	25	37	40	45	25	62–64
65–68	38	40	46	25	38	41	47	26	38	41	48	26	65–68
69–71	39	42	48	26	39	43	49	27	40	43	50	27	69–71
72–74	41	44	50	27	41	45	51	28	41	45	51	28	72–74
75–78	42	46	52	28	42	47	52	30	42	47	52	30	75–78
79–80	45	51	56	31	45	51	56	31	45	51	56	31	79–80

T Score	Ages 13:0–13:3				Ages 13:4–13:7				Ages 13:8–13:11				*T* Score
	SI	VC	BD	MR	SI	VC	BD	MR	SI	VC	BD	MR	
20–21	4	5	3	4	5	5	3	4	5	5	3	4	20–21
22–24	11	11	8	9	11	12	9	9	12	12	9	9	22–24
25–28	15	14	11	11	15	15	12	11	15	15	13	11	25–28
29–31	18	17	15	12	18	18	16	12	18	18	16	13	29–31
32–34	21	20	18	14	21	21	19	14	21	21	20	14	32–34
35–38	23	23	22	15	23	23	23	15	23	24	23	15	35–38
39–41	25	25	26	17	25	26	26	17	25	26	26	17	39–41
42–44	27	28	29	18	27	28	29	18	28	29	29	18	42–44
45–48	29	30	32	19	29	31	32	19	29	31	32	20	45–48
49–51	31	33	34	21	31	33	35	21	31	34	35	21	49–51
52–54	33	35	37	22	33	35	37	22	33	36	37	22	52–54
55–58	34	37	40	23	34	37	40	23	35	37	40	23	55–58
59–61	35	38	42	24	36	39	43	24	36	39	43	24	59–61
62–64	37	40	45	25	37	41	45	25	37	41	46	25	62–64
65–68	38	42	48	26	38	42	48	26	39	43	48	26	65–68
69–71	40	44	50	27	40	44	50	27	40	45	50	27	69–71
72–74	41	46	51	28	41	46	51	28	41	46	52	28	72–74
75–78	42	48	53	30	42	48	53	30	42	48	53	30	75–78
79–80	45	52	56	31	45	52	56	31	45	52	56	31	79–80

Table 5. WISC–V Subtest Total Raw Score Equivalents for WASI–II *T* Scores for Entry on Q-global (*continued*)

T Score	Ages 14:0–14:3				Ages 14:4–14:7				Ages 14:8–14:11				*T* Score
	SI	VC	BD	MR	SI	VC	BD	MR	SI	VC	BD	MR	
20–21	5	5	3	4	5	6	3	4	5	6	3	4	20–21
22–24	12	12	9	9	13	13	9	9	13	13	9	9	22–24
25–28	16	15	13	11	16	16	13	11	16	16	13	11	25–28
29–31	19	18	16	13	19	19	17	13	19	19	17	13	29–31
32–34	22	21	20	14	22	22	20	14	22	22	20	14	32–34
35–38	24	24	23	15	24	25	23	16	25	25	23	16	35–38
39–41	26	27	26	17	26	28	27	17	27	28	27	18	39–41
42–44	28	30	29	18	28	31	30	19	29	31	30	19	42–44
45–48	30	32	32	20	30	33	33	20	30	33	33	20	45–48
49–51	32	34	35	21	32	35	36	21	32	35	36	21	49–51
52–54	34	36	38	22	34	37	38	22	34	37	39	22	52–54
55–58	35	38	40	23	35	38	41	23	36	39	41	23	55–58
59–61	36	40	43	24	37	40	44	24	37	41	44	24	59–61
62–64	37	42	46	25	38	42	47	25	39	43	47	25	62–64
65–68	39	43	48	26	39	44	49	26	40	44	49	26	65–68
69–71	40	45	50	27	40	45	51	27	41	46	51	27	69–71
72–74	41	47	52	28	41	47	52	28	42	48	52	28	72–74
75–78	42	49	53	30	42	49	53	30	43	50	53	30	75–78
79–80	45	52	56	31	45	52	56	31	45	53	56	31	79–80

T Score	Ages 15:0–15:3				Ages 15:4–15:7				Ages 15:8–15:11				*T* Score
	SI	VC	BD	MR	SI	VC	BD	MR	SI	VC	BD	MR	
20–21	6	6	3	4	6	6	4	4	6	6	4	4	20–21
22–24	13	13	9	9	14	14	10	9	14	14	10	10	22–24
25–28	17	16	13	11	17	16	13	11	17	17	14	12	25–28
29–31	20	19	17	13	20	19	17	13	20	20	17	13	29–31
32–34	23	22	20	14	23	23	20	14	23	23	20	15	32–34
35–38	25	25	23	16	25	26	23	16	25	26	24	16	35–38
39–41	27	29	27	18	27	29	27	18	27	29	27	18	39–41
42–44	29	32	30	19	29	32	30	19	29	32	31	19	42–44
45–48	30	34	33	20	30	34	34	20	32	34	35	20	45–48
49–51	32	36	37	21	32	36	38	21	34	37	39	21	49–51
52–54	34	38	40	22	34	38	41	22	35	39	42	23	52–54
55–58	36	40	43	23	36	41	43	23	37	41	44	24	55–58
59–61	37	42	45	24	38	43	45	24	38	43	46	25	59–61
62–64	39	44	47	25	39	44	47	25	39	44	48	26	62–64
65–68	40	45	49	26	41	45	49	26	41	46	50	27	65–68
69–71	41	46	51	27	42	47	51	27	42	48	52	28	69–71
72–74	42	48	52	28	43	49	53	28	43	49	53	29	72–74
75–78	43	50	53	30	44	51	54	30	44	51	54	29	75–78
79–80	45	53	56	31	46	53	57	31	46	53	57	31	79–80

Table 5. WISC–V Subtest Total Raw Score Equivalents for WASI–II *T* Scores for Entry on Q-global (*continued*)

T Score	Ages 16:0–16:3				Ages 16:4–16:7				Ages 16:8–16:11				*T* Score
	SI	VC	BD	MR	SI	VC	BD	MR	SI	VC	BD	MR	
20–21	6	6	4	4	6	7	5	4	7	7	5	4	20–21
22–24	14	14	11	10	14	15	12	10	15	15	12	10	22–24
25–28	17	17	15	12	17	18	16	12	18	18	16	12	25–28
29–31	20	20	18	13	20	21	20	13	21	21	20	13	29–31
32–34	23	23	22	15	23	24	23	15	24	24	24	15	32–34
35–38	25	26	25	16	25	27	26	16	26	27	27	16	35–38
39–41	27	30	28	18	27	30	29	18	28	30	30	18	39–41
42–44	29	33	32	19	30	33	33	19	30	33	33	19	42–44
45–48	32	35	36	20	32	35	36	20	32	36	37	20	45–48
49–51	34	37	39	22	34	38	39	22	34	38	40	22	49–51
52–54	36	39	42	23	36	40	42	23	36	41	43	23	52–54
55–58	37	42	45	24	37	42	45	24	37	42	46	24	55–58
59–61	39	43	47	25	39	44	48	25	39	44	48	25	59–61
62–64	40	45	49	26	41	45	50	26	41	45	50	26	62–64
65–68	42	46	51	27	42	47	52	27	43	47	52	27	65–68
69–71	43	48	53	28	43	49	53	28	44	49	53	28	69–71
72–74	44	50	54	29	44	51	54	29	45	51	54	29	72–74
75–78	45	51	55	29	45	52	55	30	46	52	55	30	75–78
79–80	46	53	57	31	46	54	57	31	46	54	57	31	79–80

References

Anastasi, A., & Urbina, S. (1997). *Psychological testing.* Upper Saddle River, NJ: Simon & Schuster.

Brody, N. (1992). *Intelligence* (2nd ed.). San Diego, CA: Academic Press.

Basso, M. R., Carona, F. D., Lowery, N., & Axelrod, B. N. (2002). Practice effects on the WAIS–III across 3– and 6–month intervals. *The Clinical Neuropsychologist, 16,* 57–63.

Flynn, J. R. (1987). Massive IQ gains in 14 nations: What IQ tests really measure. *Psychological Bulletin, 101*, 171–191.

Flynn, J. R. (1999). Searching for justice: The discovery of IQ gains over time. American Psychologist, 54, 5–20.

Flynn, J. R. (2007). *What is intelligence? Beyond the Flynn effect*. Cambridge, England: Cambridge University Press.

Heaton, R. K., Temkin, N., Dikmen, S., Avitable, N., Taylor, M. J., Marcotte, T. D., & Grant, I. (2001). Detecting change: A comparison of three neuropsychological methods, using normal and clinical samples. *Archives of Clinical Neuropsychology, 15*, 75–91.

Kamphaus, R. W. (1993). *Clinical assessment of children's intelligence.* Boston: Allyn & Bacon.

Kaufman, A. S., & Lichtenberger, E. O. (2005). *Assessing adolescent and adult intelligence (3rd ed.).* Hoboken, NJ: John Wiley & Sons.

Pearson. (1999). *Wechsler abbreviated scale of intelligence.* San Antonio, TX: Pearson.

Rapport, L. J., Brines, D. B., Axelrod, B. N., & Theisen, M. E. (1997). Full Scale IQ as mediator of practice effects: The rich get richer. *The Clinical Neuropsychologist, 11*, 375–380.

Ryan, J. J., Glass, L. A., & Bartels, J. M. (2010). Stability of the WISC–IV in a sample of elementary and middle school children. *Applied Neuropsychology, 17,* 68–72. doi:10.1080/09084280903297933

Sattler, J. M. (2008). *Assessment of children: Cognitive foundations* (5th ed.). San Diego, CA: Author.

Wechsler, D. (1991). *Wechsler intelligence scale for children* (3rd ed.). San Antonio, TX: The Psychological Corporation.

Wechsler, D. (2003). *Wechsler intelligence scale for children* (4th ed.). Bloomington, MN: Pearson.

Wechsler, D. (2011). *Wechsler abbreviated scale of intelligence* (2nd ed.). Bloomington, MN: Pearson.

Wechsler, D. (2014). *Wechsler intelligence scale for children* (5th ed.). Bloomington, MN: Pearson.

Zhou, X., & Raiford, S. (2011). *Using the WASI–II with the WISC®–V: Substituting WASI–II subtest scores when deriving WISC–V composite scores* (WASI–II Technical Report #1). Bloomington, MN: Pearson. Retrieved from http://images.pearsonclinical.com/images/CA/Webinars/WASI-II-WISC-IV-Editorial-LR.pdf

Zhu, J., Tulsky, D., Vasquez, C., & Pike, J. (1999, February). V*alidity studies of the Wechsler Abbreviated Scale of Intelligence.* Paper presented at the Annual Convention of the National Association of School Psychologists, Las Vegas, Nevada.