



# Wide Range Achievement Test, 5<sup>th</sup> Edition

## Overview & Applications

Patrick Moran, Ph.D.

Pearson





# WRAT5 Agenda

---

Background  
Overview  
Test Structure  
Applications

## Background

**Authors:** Gary S. Wilkinson, PhD, Gary J. Robertson, PhD

**History:** WRAT: 1946 with 1978 Norm Up.  
WRAT-R: 1984  
WRAT3: 1993  
WRAT4: 2006

## What is the WRAT5?

- The WRAT5 is an efficient, easy to administer and psychometrically sound assessment of foundational **academic skills**.
- A norm-referenced test that measures:
  - Word reading
  - Sentence comprehension
  - Spelling
  - Math computation

## A tool for what purpose?

- Supports the evaluation process for estimating strengths and weaknesses relevant to:
  - ***Learning***
  - ***Job-readiness***
  - ***“Functional” academic skills***
- Uses beyond the school setting
- Considered a “screener”: not comprehensive

## Test Overview

- Qualification Level: **B**
- Age Range: Individuals **5 - 85+** yrs.
- RTI Tiers: RTI Levels **2 / 3**
- Completion Time:
  - Ages 5-7 yrs.: approx. **15-25** minutes
  - Ages 8 yrs. and up: approx. **35-45** minutes

# Administration and Scoring Options

- **Administration:**
  1. Paper and pencil
  2. Q-interactive
- **Scoring Options:**
  1. Hand scoring and Q-global™ (Dec, 2017)
  2. Q-interactive (Coming Soon)
- **Scores Available:**
  1. Standard scores, percentile ranks, stanines, normal curve equivalents, grade equivalents, and Growth Scale Values (GSVs)

## WRAT4 vs. WRAT5

- 1. New norms** - Updated with new data reflecting current populations based on recent census information
- 2. Improved identification of learning disabilities**
  - Ability Achievement Discrepancy Analysis – New
  - PSW Analysis – New (with Digital Scoring)
  - Validity studies targeting LD reading and LD math
- 3. Streamlining of rules** - Grade based start points, simple reversal rules and clear discontinue rules make sure you focus on the items that need to be administered
- 4. Digital administration, scoring and reporting**



## WRAT4 vs WRAT5 (cont.)

- 5. Addition of Q-global scoring** - Helps you quickly and efficiently organize examinee information, generate scores, and produce accurate, comprehensive reports
- 6. Addition of Q-interactive administration and scoring** - A comprehensive digital system that can be used to administer and score the complete WRAT5.

## WRAT4 vs WRAT5 (cont.)

### 7. Subtest improvements

- Math Computation subtest now covers a wider range of domains
- New Sentence Comprehension subtest items
- Shortened and simplified context sentence prompts for spelling
- Added lowercase letters and allowed letter sounds as correct responses on Letter Reading

# Standardization

- Standardized on national grade- and age-based samples:
  - Each with over 2000 individuals.
  - Scores were developed for:
    - grades K–12
    - ages 5–85+

## Reliability & Validity

- **Internal reliability coefficients:** Average subtest and Reading composite reliabilities range from very good (upper .80s) to excellent (.90s)
- **Validity** determined from the content and structure of the test battery, studies with special groups of individuals, and correlations with other widely used achievement and cognitive ability measures.
  - Clinical samples (Gifted, Intellectual Disability, LD Reading, LD Math)
  - Correlations with achievement tests (WRAT4, WIAT-III)
  - Correlations with ability tests (WISC-V, WASI-II)

# Test Structure

## Test Structure

- Derived scores and interpretive information for **four** subtests:
  1. **Word Reading**
  2. **Sentence Comprehension**
  3. **Spelling**
  4. **Math Computation**
  
- **Reading Composite Score**

## WRAT5 Subtests

- 1. Word Reading** measures untimed letter identification and word recognition. The examinee reads aloud a list of letters or words
- 2. Sentence Comprehension** measures the ability to identify the meaning of words and to comprehend the ideas and information in a sentence using an untimed modified cloze procedure. Each item requires the examinee to read (aloud or silently) a sentence with a word or two missing, and then provide a response to effectively complete the sentence

## WRAT5 Subtests

- 3. Spelling** measures an individual's ability to write letters and words from dictation without a time limit
- 4. Math Computation** measures an individual's ability to count, identify numbers, solve simple oral math problems, and calculate written math problems with a time limit. Problems are presented in a range of domains, including arithmetic, algebra, geometry, and advanced operations



## WRAT5 Composite

- A **Reading Composite score** is created by combining the Word Reading and Sentence Comprehension standard scores

## SCORE SUMMARY

Subtest/Composite	Raw Score	Standard Score	90% Confidence Interval	Percentile Rank	Descriptive Category	Grade Equivalent	Growth Scale Value
Math Computation	34	89	81 - 97	23	Low Average	5.0	500
Spelling	26	79	73 - 85	8	Very Low	3.2	478
Word Reading	34	74	68 - 80	4	Very Low	2.4	468
Sentence Comprehension	33	100	94 - 106	50	Average	6.8	511
<b>Reading Composite</b>	174	86	82 - 90	18	Low Average	-	-

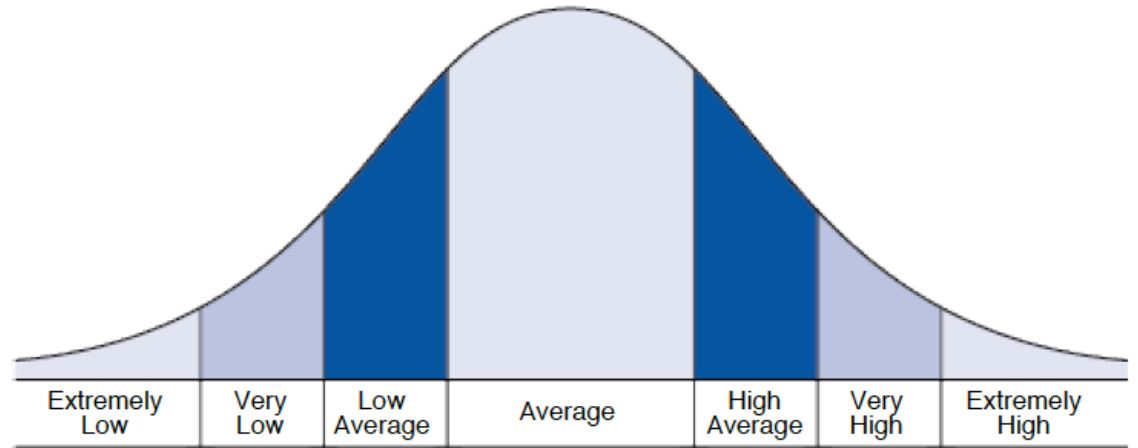
## STANDARD SCORE COMPARISONS

Comparisons	Difference	Significance Level	Base Rate
Word Reading vs. Spelling	-5	NS	-
Word Reading vs. Math Computation	-15	<.05	<=15%
Word Reading vs. Sentence Comprehension	-26	<.05	<=2%
Spelling vs. Math Computation	-10	NS	-
Spelling vs. Sentence Comprehension	-21	<.05	<=10%
Math Computation vs. Sentence Comprehension	-11	<.10	<=25%

*Note.* A negative difference indicates that the second subtest has a higher score than the first subtest listed in the comparison.

Comparisons were made using the age reference group.

## STANDARD SCORE PROFILE



	55	70	80	90	100	110	120	130	145	Score	Confidence Interval
Math Computation				◆						89	81 - 97
Spelling			◆							79	73 - 85
Word Reading		◆								74	68 - 80
Sentence Comprehension					◆					100	94 - 106
<b>Reading Composite</b>				◆						<b>86</b>	<b>82 - 90</b>

## ABILITY-ACHIEVEMENT DISCREPANCY ANALYSIS

Ability Score Type: WISC-V: FSIQ

Ability Score: 95

Simple-Difference Method

WRAT5 Subtest/Composite	FSIQ Score	WRAT5 Score	Difference	Significance Level	Base Rate
Math Computation	95	89	6	NS	>25%
Spelling	95	79	16	<.01	<=15%
Word Reading	95	74	21	<.01	<=5%
Sentence Comprehension	95	100	-	-	-
<b>Reading Composite</b>	95	86	9	<.05	<=25%

*Note.* Scores are not reported when the achievement score equals or exceeds the ability scores.

# Applications

## WRAT Uses: Screening for...

1. Identification of people at-risk for learning disabilities
2. Academic skills in reading, writing, math
3. Educational placement
4. Data contributing to a neuropsychological or psychoeducational evaluation
5. Determination of disability
6. Assistance for determining skill set (acquired vs. emerging skills)
7. Premorbid functioning (various conditions)
8. Use in a forensic evaluation
9. Growth/change over time
10. Vocational training or job placement
11. Level of care and home support services

## Historical Viewpoints: Why have people chosen to use WRAT for so long?

- The WRAT-R has strong normative data
  - Normed on 5,600 individuals with these demographic variables accounted for: age, geographic region, sex, race, and metropolitan/nonmetropolitan area.
- The WRAT-R shown to be a good estimate of premorbid verbal intelligence for lower functioning patients, which is at higher risk for TBI (Kraus et al., 1984).

## Neuro application

- **Use as a "hold test"**: tap abilities resistant to cognitive declines following neurological damage.
- “Hold-don't hold” methods:
  - Estimate premorbid ability based on the individual's current performance on a measure that is considered to be relatively resistant to neurological impairment.



## Why use the WRAT? Reading Nuances

- Includes both regularly and irregularly spelled words
- Organized based on item difficulty
- Many early/easy items are sight words (irregular)
- Word Reading tests (Willshire et al., 1991):
  1. Reading is highly correlated with intelligence level in the general population;
  2. Reading ability is more resistant to dementia than is the WAIS Vocabulary subtest;
  3. The reading of irregular words is more resistant to cognitive decline than is reading of regular words;
  4. Word reading taps previous knowledge while minimizing the demands on current cognitive capacity.

## Contributing to a Battery

- The WRAT5 can serve as part of a comprehensive psychoeducational or neuropsychological test battery to enhance understanding of an individual's total functioning.
- Academic achievement part of battery including:
  - Cognitive ability/impairment
  - Personality
  - Speech and language development/impairment
  - Fine and gross motor skills

# Testing Large Populations

- Because it's brief...
  - Useful for estimating the educational achievement of large, where administering long tests may be impractical.
- The Math Computation and Spelling subtests can be administered in small-group test sessions.

## Application Outside of Schools

- Military recruits
- Prisoners
- Patients in a hospital
- Applicants to industry training programs
- Juvenile delinquents awaiting court hearings

## Review of Features and Benefits

1. Subtests
2. Time-efficient
3. Easy to administer and score
4. Wide age range of administration
5. Progress Monitoring
6. Flexible Administration
7. Reliable...Valid

## The Value of the WRAT5 in Clinical and Educational Settings:

1. Efficiency
2. Ease of Administration
3. Psychometrically Sound
4. Flexible

Norm-referenced test that measures word reading, sentence comprehension, spelling, and math computation

## Application in S/L and OT Spheres

- How (much) does disability affect client's ability to...?
- Do client's academic skills (reading, writing, math) affect their ability function independently?
  - Pay bills, write emails, read prescriptions, read the news...
- What level of support does client need to function independently?
  - Continuum of care: Rehab to Home

## **Q: Why should I move from the WRAT4 to the WRAT5?**

**A:** The WRAT5 offers you new norms, access to digital administration, scoring and reporting, improved identification of learning disabilities, streamlining of rules and subtest improvements.



**Demonstration of  
WRAT-5 on  
Q-interactive**

US Customers:

[www.pearsonclinical.com](http://www.pearsonclinical.com)

Canadian Customers:

[www.pearsonclinical.ca](http://www.pearsonclinical.ca)

ALWAYS LEARNING

**Patrick Moran, Ph.D.**

**[patrick.moran@pearson.com](mailto:patrick.moran@pearson.com)**

**Pearson Clinical Assessment**