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Achievement Tests of a Student with an Intellectual Disability

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ABSTRACT

Intellectual Disabilities (ID) are defined by significant deficits in cognitive and adaptive abilities (American Psychiatric Association, 2013; Schalock et al., 2010). As a result, students with intellectual disabilities typically lag academically (particularly in math and reading) compared to their neurotypical grade-level peers and require special education services for these and other subjects. In this single-subject case study, we administered three standardized academic achievement tests on an eleventh-grade student with ID to determine his current academic achievement levels in math, reading, and writing. The tests included Woodcock Johnson Reading Mastery Test-Revised, Kaufman Test of Educational Achievement-3, and KeyMath-3. Through this study, we were able to examine the student's overall achievement as well as his strengths and weaknesses in specific areas of math, reading, and writing. Our findings indicate that the students' abilities in math, reading, and writing are significantly below his grade-level peers and that he is eligible for special education services.

BACKGROUND

The student is sixteen years old and in the eleventh grade. He is diagnosed with an Intellectual Disability and is served in a self-contained classroom. His strengths are in reading and spelling and he struggles with math.

Intellectual disability is defined as a developmental condition that is characterized by significant deficits in both intellectual functioning and adaptive behavior, including conceptual, social and practical skills (American Psychiatric Association, 2013; Schalock et al., 2010) The causes of an Intellectual Disability can originate from chromosomal factors, inborn errors of metabolism, maternal alcohol or drug consumption, prenatally, and/or postnatally such as brain injury or deprivation. It can be the result of a number of any known or unknown causes or a combination (Tasse, 2016). Though not the only indicator, an individual with an intellectual disability will have a less than average intelligence as found through an Intelligence Quotient (IQ) assessment. Average scores for an IQ test range between 85-115 while 70 and below is considered below average as it is two standard deviations below the mean (Lewis and Doorlag, 2011).

HYPOTHESIS

Our hypothesis is that the student will have significantly more weaknesses and significantly less strengths than his typically developing peers in math, reading, and writing due to his intellectual disability. We also predict that he will perform significantly below grade level in each subject.

METHODOLOGY

Subject: The subject is a 16-year-old eleventh grade boy with ID. He is served in self-contained special education classes.

Setting: The assessment was conducted at Evergreen High School.

Purpose: The purpose of this single subject case-study is to compare the strengths and weaknesses of the subject student in math, reading, and writing to that of his typically developing peers.

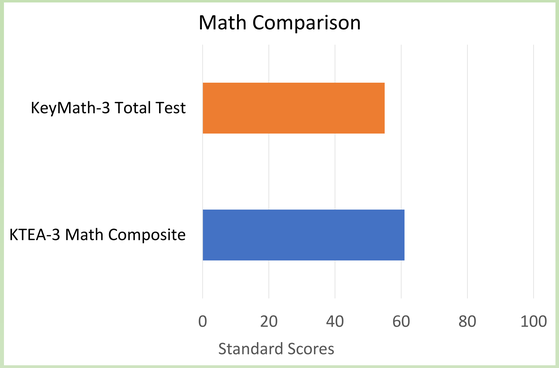
Instruments: The instruments utilized include an informal observation, the Woodcock Reading Mastery Test-Revised (WRMT-R), the Kaufman Test of Educational Achievement- 3 (KTEA-3), and KeyMath3.

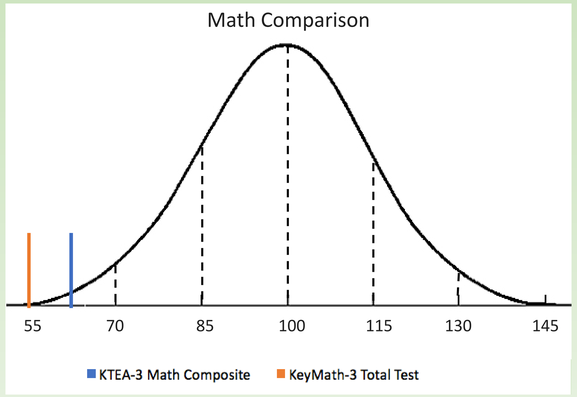
WOODCOCK READING MASTERY TESTS-REVISED

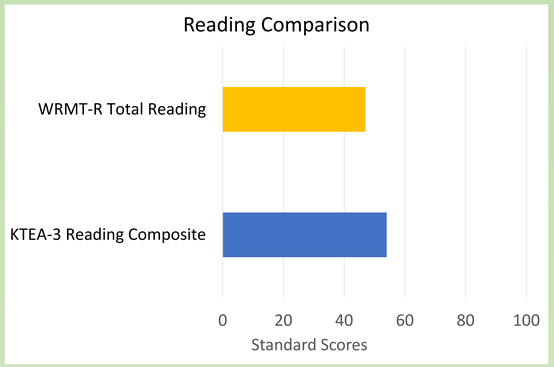
The Woodcock Reading Mastery Test-Revised (WRMT-R) is an individual assessment of a student's reading ability. It is used for individuals ages 5 years old through age 75.

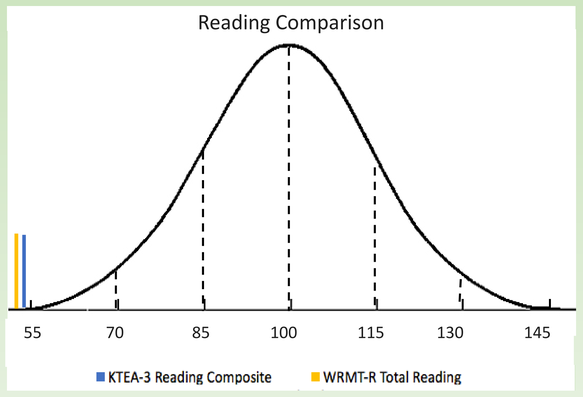
- Total Reading Cluster: Standard Score (SS) = 47 , Percentile Rank (PR)= 0.1, Grade Equivalency (GE)= K.6
- Readiness Cluster: SS= 30, PR=0.1, GE= 1.9
- Basic Skills Cluster: SS= 68, PR=2, GE= 2.8
- Reading Comprehension: SS= 57, PR=0.2, GE= 2.5

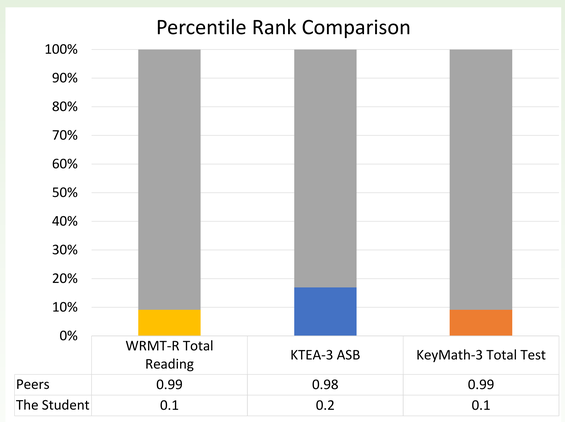
The student's standard scores all fell well below average. His grade equivalencies put him well below his actual grade, 11th grade. The student's' strongest cluster was the Basic Skills Cluster and his weakest was the Readiness Cluster.



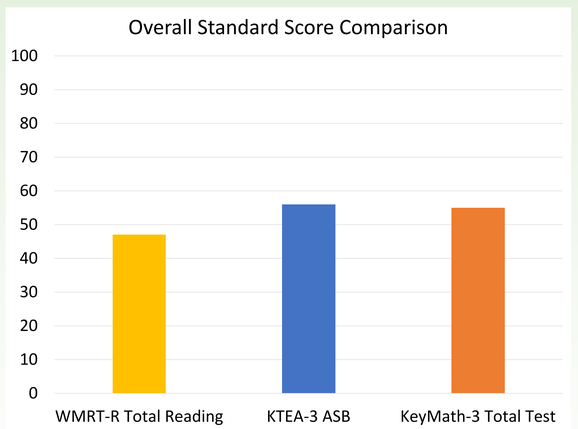








The student performed as well as or better than 0.1% of peers in WRMT-R, 0.2 % of his peers in KTEA-3, and 0.1% of his peers in KeyMath-3.



ASSESSMENT QUESTIONS	ASSESSMENT PROCEDURES	PERSON RESPONSIBLE	DATE
Is the student a good candidate for testing?	Informal Observation	Arissa Alley, Alex Maddox, and Angela Nigrelli	October 23, 2017
What are the student's strengths and weaknesses in math?	KeyMath3 and KTEA-3	Special Education Teacher/School Psychologist	November 14, 2017 October 30, 2017
What are the student's strengths and weaknesses in reading?	WRMT-R and KTEA-3	Special Education Teacher/School Psychologist	October 23, 2017 October 30, 2017
What are the student's strengths and weaknesses in writing?	KTEA-3	Special Education Teacher/School Psychologist	October 30, 2017

KAUFMAN TEST OF ACHIEVEMENT

The Kaufman Test of Educational Achievement III (KTEA-3) is designed to screen students to be able to determine an estimated score of achievement. It was developed by Dr. Alan S. Kaufman and Dr. Nadeen K. Kaufman and was published in 2014. The KTEA-3 assesses math, reading, and written expression.

- Academic Skills Battery: Standard Score (SS) = 56, Percentile Rank (PR)= 0.2
- Reading Composite: SS = 54
- Math Composite: SS = 61
- Written Language Composite: SS = 44

The student fell well below average on the Academic Skills Battery and within each composite. The student performed best in the math composite and was weakest in the written language composite.

KeyMath-3

KeyMath-3 is a mathematical diagnostics test designed to measure essential mathematical concepts and skills by administering subtests individually. KeyMath-3 has content that matches with certain NCTM standards such as numerations, algebra, geometry, measurement, and data analysis and probability.

- Total Test: Standard Score (SS) = 55 , Percentile Rank (PR)= 0.1, Grade Equivalency (GE)= 1.2
- Basic Concepts: SS = 55 , PR= 0.1, GE= 1.0
- Operations: SS= 58, PR=0.3, GE=2.0
- Applications: SS=55, PR=0.1, GE=1.2

The student fell below average with each subtest. His strongest subtest was Operations which included problem solving. His weakest subtests were both Basic Concepts and Applications which included mental math, addition, subtraction, multiplication, division.

COMPARISONS

For a math score comparison, KeyMath-3 was compared with the math portion of KTEA-3. The standard score for the total test of KeyMath-3 was 55 and the standard score for the total math composite of KTEA-3 was 61. For a reading score comparison, the WRMT-R total reading cluster was compared with the reading composite of KTEA-3. The standard score for the WRMT-R reading cluster was 47 and for the reading composite of KTEA-3, the standard score was 54. Though no score was identical within the comparisons, they were similar. In both comparisons, the subject had a higher standard score in the KTEA-3 which is likely due to the greater number of subtests factored in. The student performed consistently across all assessments.

RECOMMENDATIONS

After analyzing the three different tests of achievements administered, we concluded some recommendations for the student in Math, Reading, and Writing. The student's overall grade equivalent ranges from grades 1-3.With this, we would recommend that his instruction should be framed around early first grade and second grade content. We recommend for the student to receive additional instruction in Math, Reading, and Writing at the instructional levels we found during our testing. The student needs to be taught with explicit instruction in all topics and should only move on to new skills after reaching mastery.

ACKNOWLEDGEMENTS

We would like to thank the student for his eager participation in this study. We would also like to thank our professor, Dr. Aftab Khan, for educating us so thoroughly on these testing instruments and proper testing procedures. Without his guidance and instruction, we would not have benefited as much as we have from this experience.

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