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Academic Assessment of a Student with Intellectual Disabilities

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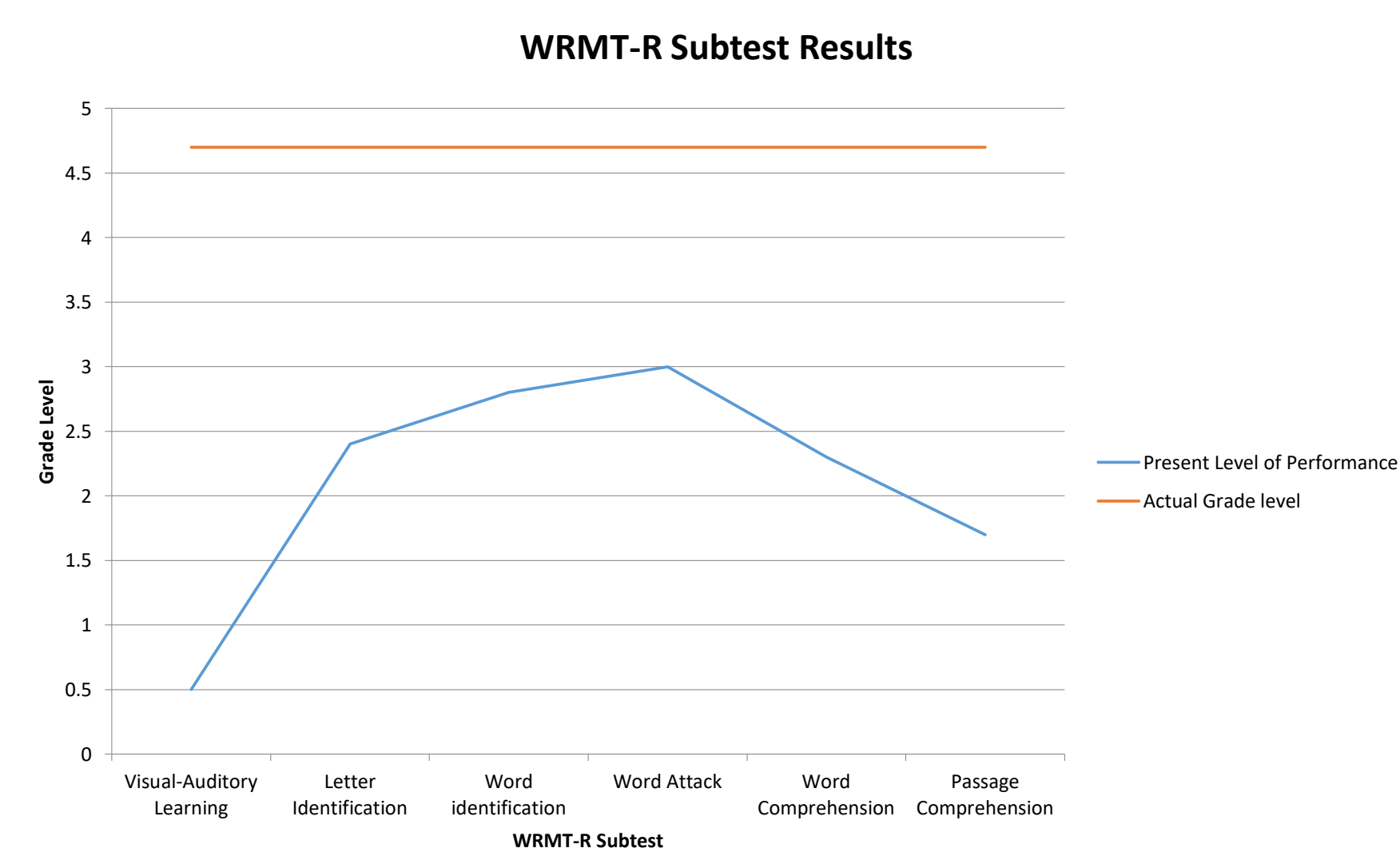## Emily Gay and Michelle Kassel, Supervisor: Dr. Aftab Khan

Abstract

We administered the Woodcock Reading Mastery Test-Revised, the KeyMath-3, and the Kaufman Test of Educational Achievement-3 to determine the student's current academic achievement level in reading and math. This was a pilot study that takes the design of a single case study. Using the purposive sampling method, this study will examine the academic level of a student with intellectual disabilities to look at the following research question: Is there a discrepancy in math, reading, and educational achievement abilities between students with intellectual disabilities and typically developed students? Our hypothesis is that our participant will score below average on all three assessments when compared to peers in the same grade.

Based on our findings we accept our hypothesis as we found that the participant's current level of academic achievement is two standard deviations below average compared to her grade level peers. We reject our hypothesis that predicted that there is concurrent validity across instruments.

Background

Individuals with intellectual disabilities have significant limitations in intellectual functioning and adaptive behavior (American Psychiatric Association, 2013). Moreover, it has been shown that compared to their age-matched controls, students diagnosed with intellectual disabilities struggle with academic achievement, specifically in the areas of math and reading (Van de Ven et al., 2010). However, to be considered eligible for special education services in public schools, a student must be assessed using a variety of methods and tests that measure aspects of the student such as general intelligence, reading ability, math comprehension, behavior, and cognitive ability.

Methods

This was a pilot study that takes the design of a single case study. Using the purposive sampling method, this study examined the academic level of a student with intellectual disabilities. The single subject is in fourth grade at Crewe Primary School who is placed in a self-contained class for reading and math.

Research Question

- Is there a discrepancy in math, reading, and educational achievement abilities between students with intellectual disabilities and typically developed students?
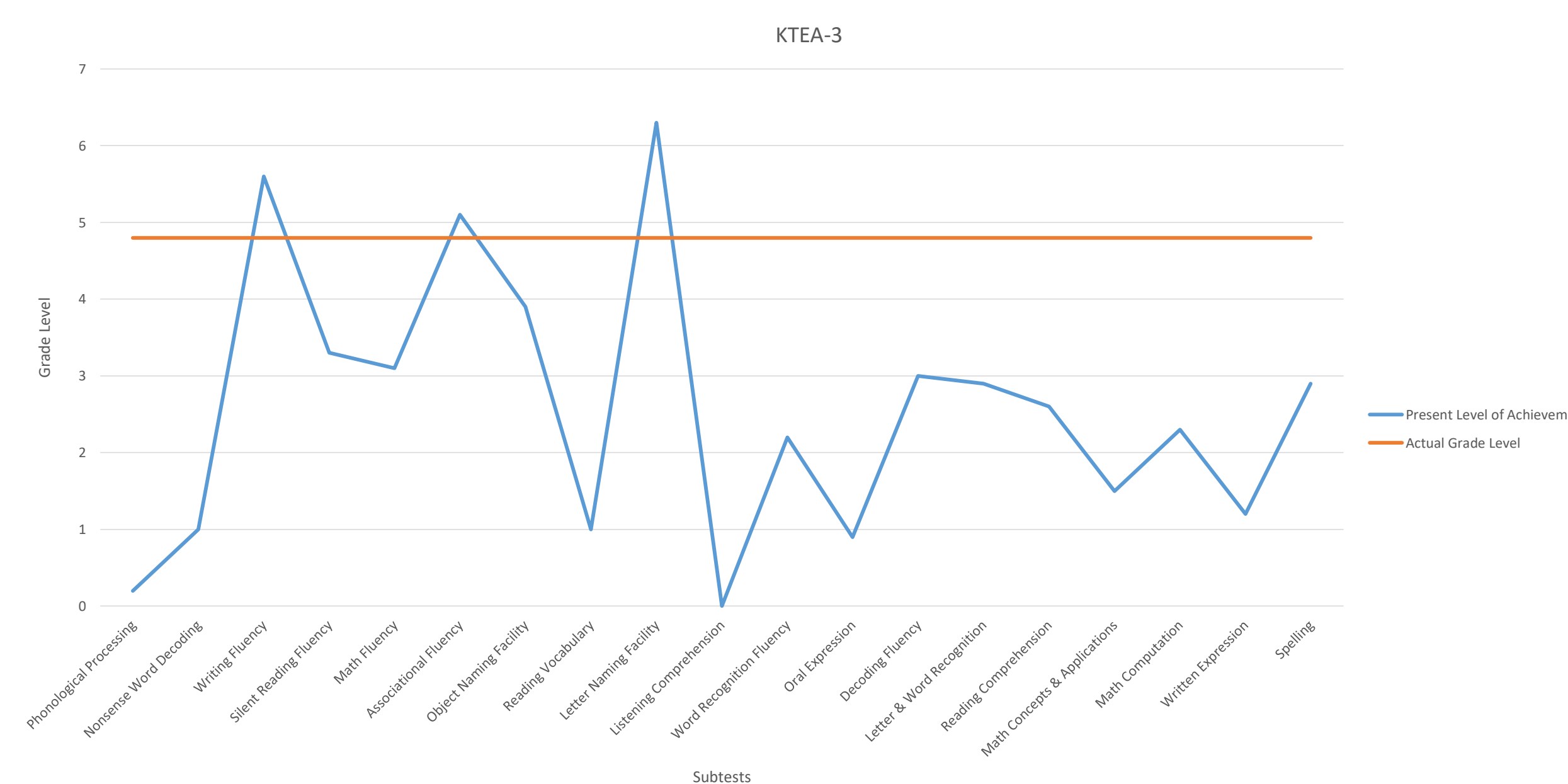
Hypothesis

- The participant in this study will score in the below average range on all three standard tests compared to other students (typically developed) in the same grade.
- The three instruments that we are using will have concurrent validity.

Instruments

- *KeyMath-3 Diagnostic Assessment*.
- *Kaufman Test of Educational Achievement -3*
- *Woodcock Reading Mastery Test*
- *Observations.* We observed the student to obtain qualitative data on her.
- *Interviews.* We interviewed the student's general education and special education teachers by asking 5 questions of each, relating to the student's class performance and academic achievement.

Test/Subtest	Standard Score
Woodcock Reading Mastery-R	84
Visual-Auditory Learning	69
Letter Identification	77
Word Identification	89
Word Attack	91
Word Comprehension	78
Passage Comprehension	76
KTEA-3	64
Phonological Processing	67
Nonsense Word Decoding	71
Writing Fluency	106
Silent Reading Fluency	90
Math Fluency	94
Associational Fluency	102
Object Naming Facility	97
Reading Vocabulary	64
Letter Naming Facility	107
Listening Comprehension	68
Word Recognition Fluency	79
Oral Expression	75
Decoding Fluency	87
Letter and Word Recognition	83
Reading Comprehension	79
Math Concepts and Applications	69
Math Computation	74
Written Expression	62
Spelling	83
KeyMath-3	71
Basic Skills	67
Operations	64
Applications	55

Participant

Our participant, at Crewe Primary school, receives special education services under the category of intellectual disability with a full range IQ score of 68. She is currently receiving special education services in a self-contained special education classroom for math and language arts and participates in social studies, science, specials, and social activities (recess and lunch) with her general education class. Her performance in class is showing improvements in understanding and abilities, so further, more recent testing will confirm or deny the continuance of special education services.

Under her current IEP, JJ receives accommodations and modifications such as the ability to use a calculator on the math SOL test, being allowed extra time to respond, being allowed extra time if effort is shown, receiving short and concise directions, having information presented visually, having materials and tests read aloud, having a reduction in the length of assignments, and having her work checked frequently to ensure understanding.

While she is showing progress, there is the possibility that she could be making more progress with the proper acceleration and scaffolding. In order to assess the most appropriate services to provide as well as the least restrictive environment, testing was completed for the most accurate description of her abilities. The participant is compliant and has no behavior issues, so testing ran smoothly.

WRMT-R Subtest Results

Woodcock Reading Mastery Test, Revised-Normative-update (WRMT-R): This assessment, created by Richard W. Woodock in 1987 and published by Pearson Assessments, measures the examinee's reading achievement including accuracy, fluency, comprehension, and other categories. A variety of skills are assessed such as short and long vowels, prefixes and suffixes, digraphs and blends, and initial, final, and misordered sounds. It is comprised of 6 subtests: Visual-Auditory Learning, Letter Identification, Word Identification, Word Attack, Word Comprehension, and Passage Comprehension, which are organized into 3 clusters. According to her scores on this test , as well as her attitude while taking each subtest, her weaknesses are in the areas of comprehension and listening, and her strength is in word attack, or simply reading stimulus words.

KeyMath-3

KeyMath-3 Diagnostic Assessment (KeyMath-3): Aligned with the National Council of Teachers of Mathematics principles and standards, the KeyMath-3 assessment measures a student's essential math skills and understanding of a variety of concepts. This assessment authored by Austin Connolly , published most recently in 2007 by Pearson, measures proficiency as well as growth as it provides a variety of normative scores which can be used to identify the present level of performance. It is comprised of 10 subtests in 3 clusters. While this student is the most confident in her math abilities, the assessment shows that she is below grade level in all tested aspects. Her strongest area is multiplication and division, followed by addition and subtraction. Her weak points are the two problem solving areas.
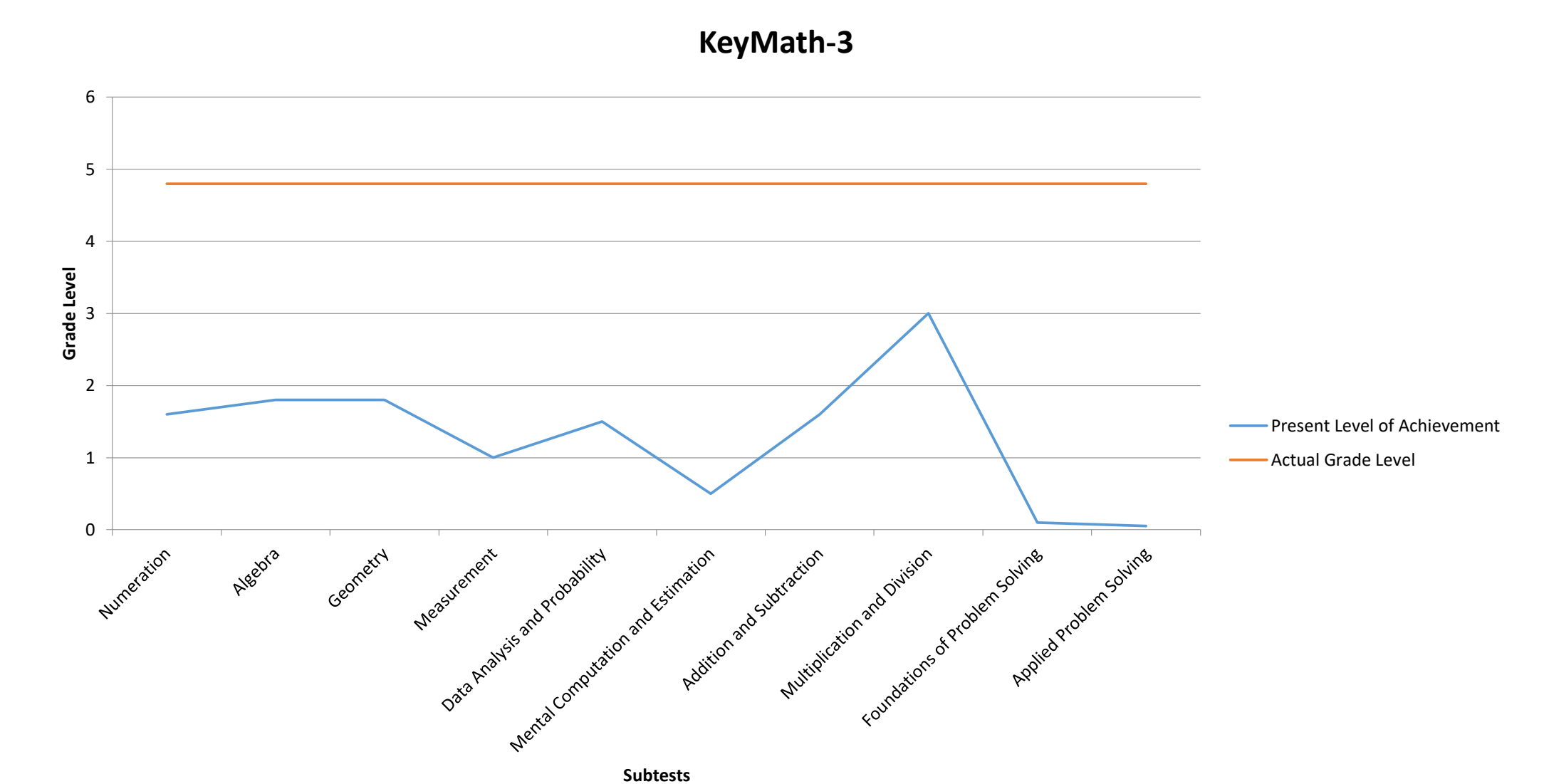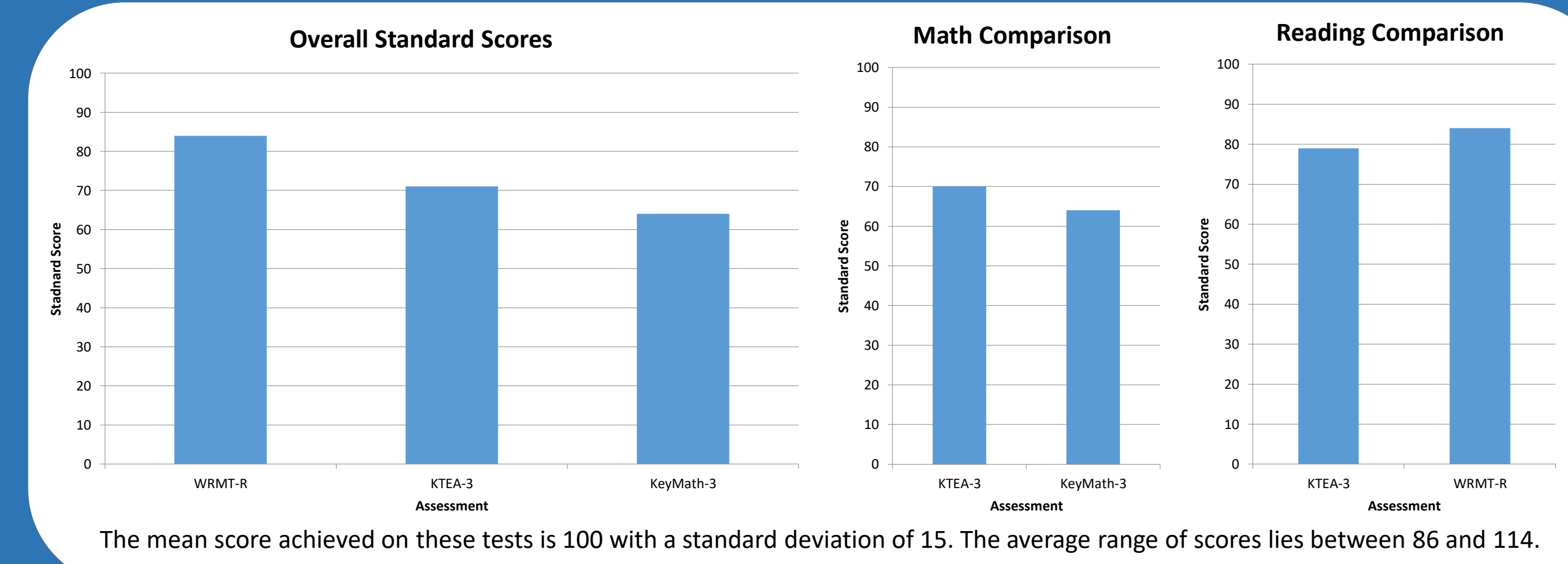
KTEA-3

Kaufman Test of Educational Achievement -3 (KTEA-3): The Kaufman Test of Educational Achievement, authored by Alan and Nadeen Kaufman and published most recently by Pearson in 2014, measures math, reading, written language, and oral language in 19 subtests using standards as outlined in IDEA, Reading First, and the National Council of Teachers of Mathematics. As shown in her scores and response booklet, her weaknesses are listening comprehension, vocabulary, and phonological processing. Her strengths are letter naming, writing fluency, and associational fluency. While completing these tests she did so with confidence and without hesitation or saying "I don't know".

Overall Standard Scores / Math Comparison / Reading Comparison

The mean score achieved on these tests is 100 with a standard deviation of 15. The average range of scores lies between 86 and 114.

Recommendations

After careful analysis of the three assessments that we used to assess her present level of achievement, we have some recommendations for her reading, math, and writing instruction. Given her overall scores for each test, we can see that she needs the most attention in her math instruction. With her calculator accommodation she can do simple calculations, so we suggest that her instruction is focused on problem solving skills and the ability to generalize these skills to novel situations. Another focus area for this student is ordering events, or sequencing.

For her reading instruction, we suggest that she is given a visual when reading. She scored low on her listening comprehension tests, and when given an assessment to analyze her reading comprehension she scored two grade levels above her listening score. This shows that she needs a visual to help her focus and understand the text. Other specific areas that we recommend focusing the most on are consonant blends, digraphs, passage comprehension, and vocabulary. We also suggest that more testing is done in the area of phonological awareness, as her scores from one test to another differed greatly.

Assessment Questions and Procedures (IAP)

Assessment Questions	Assessment Procedures	Person Responsible	Date
What is her current math ability?	Administer KeyMath-3 and KTEA-3 assessments	Special Education Teacher or School Psychologist	March 31, 2017 April 3, 2017
What is her current reading ability?	Administer WRMT-R and KTEA-3 assessments	Special Education Teacher or School Psychologist	March 24, 2017 March 31,2017
What is her current writing ability?	Administer KTEA-3 assessment	Special Education Teacher or School Psychologist	March 31, 2017 April 3, 2017

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