

Apr 26th, 3:00 PM - 4:00 PM

Attention-Deficit/Hyperactivity Disorders Effect on a Student's Academic Achievement

Emily V. Hume
Longwood University

Joan Giordano
Longwood University

Amanda Miller
Longwood University

Follow this and additional works at: <http://digitalcommons.longwood.edu/grs>

Hume, Emily V.; Giordano, Joan; and Miller, Amanda, "Attention-Deficit/Hyperactivity Disorders Effect on a Student's Academic Achievement" (2017). *Longwood Graduate Research Symposium*. 26.
<http://digitalcommons.longwood.edu/grs/2017/Wednesday/26>

This Event is brought to you for free and open access by the College of Graduate & Professional Studies at Digital Commons @ Longwood University. It has been accepted for inclusion in Longwood Graduate Research Symposium by an authorized administrator of Digital Commons @ Longwood University. For more information, please contact hinestm@longwood.edu.



Attention-Deficit/Hyperactivity Disorders Effect on a Student's Academic Achievement

Joan Giordano Emily Hume Amanda Miller
Supervisor: Aftab Khan, PhD.
Longwood University



Abstract

Studies have shown that students with exceptionalities especially those diagnosed with intellectual disabilities struggle in academic achievement (reading and math) compared to their grade-matched controls (Van der Ven et al., 2011). However, mixed results were found with students with ADHD. ADHD does not affect the student's achievement level, it affects their ability to get the information needed. Many receive 504 accommodations compared to getting services under IDEA (US Department of Education, 2013). This is a single-subject case study, that used purposive sampling. The objective of this study is to examine academic level of an individual with ADHD. We administered three standardized tests to measure a student's reading and math skills, and their overall level of academic achievement. We conducted a total of three observations and a review of his cumulative folder. The results of the study show that the student's academic achievement level is within one standard deviation of the mean.

Case Study

Student

The student is an eight-year old in the second grade at Buckingham County Primary School in Dillwyn, Virginia. The school is departmentalized, the student switches classes for math and reading. He is in an inclusion classroom with Special Education support. The student does not show all of the symptoms of his exceptionality. His most apparent symptom is the hyperactivity.

Learning Needs

The student was found eligible for Special Education services under the qualification of Other Health Impairments, for his diagnosis of Attention Deficit Hyperactivity Disorder. Through his IEP the student also receives speech services for the 30 minutes once a week and Occupational Therapy services.

Behavior Issues

The student showed various hyperactivity behavior issues throughout the testing process. His behaviors did not affect him socially but did have an impact on his learning. He rushed through his assessments and some of his answers were impulsive. He asked for multiple breaks throughout because he could not sit still.

Exceptionality

The student's exceptionality is Attention-Deficient/Hyperactivity Disorder. According to the Mayo Clinic, it is a chronic condition that includes a combination of issues. These issues include: difficulties sustaining attention, hyperactivity, and impulsive behaviors. Students with ADHD may experience poor relationships, low self-esteem, and may struggle in school.

Research Question

What is the level of academic achievement for students categorized with Other Health Impairments specifically those diagnosed with Attention-Deficit/ Hyperactivity Disorder?

Hypothesis

- The student with ADHD will score within one standard deviation above or below the mean on reading level compare to grade-matched peers.
- The student with ADHD will score within one standard deviation above or below the mean on math test compare to grade-matched peers.
- The student with ADHD will score within one standard deviation above or below the mean on the overall achievement test compared to grade-matched peers.
- We expect to reject the null hypothesis that the student with score two standard deviations above or below the mean on all tests.

Assessment Questions and Procedure (IAP)

Assessment Questions	Assessment Procedures	Person(s) Responsible	Date/Time
1. Is the student performing on Grade Level for Math and Reading?	KTEA-3 KeyMath-3 WRMT	Test Administrators	Spring 2017
2. What areas are the student struggling with in Reading?	KTEA-3 WRMT	Test Administrators	Spring 2017
3. What are the areas the student is struggling with in Math?	KTEA-3 KeyMath-3	Test Administrators	Spring 2017

Results



Summary and Discussion of Results

Kaufman Test of Educational Achievement

The student's scores were inconsistent throughout the assessment. His scores were a reflection of how his exceptionality of ADHD can affect his academics. There were subtests where he scored a high average range as well as a standard deviation above average but there were also subtests where he scored in the lower-average range as well as one standard deviation below average. His math scores were consistent with the other mathematic assessment, KeyMath-3, demonstrating that he is performing below average in mathematics. He scored above average in the object naming facility and letter naming facility.

KeyMath-3

The student is performing one grade level below his current grade level. His total standard score for this assessment was an 83. This is one standard deviation below the average. For each subtest, he performed below his grade level. Some subtests were only slightly below, while others were more significant, such as measurement and data analysis and probability. The student had the most trouble focusing on the test and question at hand and struggled to pay attention. This gradually become more apparent as the test progressed. We believe that his scores on the final cluster of the test do not truly reflect the student's abilities in this area because he was unconcerned about the test at this point and was more concerned about going to recess.

Woodcock Reading Mastery Test- Revised

The student is completing most work at grade level and is performing at a level that is reasonable for his age and grade. The student performed well on most tests and when he struggled, he still persisted. He is strong on identification of words and letters as well as his comprehension. One area he struggled in was the antonyms. He understood the general concept that it was the opposite but he could not think of words that meant the opposite. In many subtests, his answers were incorrect but still made logical sense.

Instruments

Classroom Observation	Woodcock Reading Mastery Test-Revised	KeyMath-3	Kaufman Test of Educational Achievement- 3 rd Edition
Reliability- Inter-rater reliability- 100%	Reliability- Internal Consistency: Total Median: .97	Reliability- Internal Consistency: .95-.97	Reliability- Overall 0.87 - 0.95
	Publisher: Pearson Education Year of Publication: 1987 Developer: Richard W. Woodcock, EdD	Publisher: Pearson Education Year of Publication: 2007 Developer: Austin J. Connolly, EdD	Publisher: American Guidance Service Year of Publication: 2014 Developer: Alan S. Kaufman and Nadeen L. Kaufman
There will be three separate observations of the student performed by three different people. This can be used with students ages 4 years 6 months and 11 months, and grades Kindergarten- 12 th . This test is administered by paper and pencil.	This test measures children and adults reading skills. This is a norm referenced test. This can be used with students ages 4 years 6 months and 11 months, and grades Kindergarten- 12 th . This test is administered by paper and pencil.	This test is administered to children individually; it measures essential mathematical concepts and skills. This test can be used with students ages 4 years 6 months to 21 years 11 months, grades Kindergarten- 12 th .	This test is administered individually to students; it is a battery assessments that provides an in-depth profile of key academic skills. It is administered to students ages 4 years to 25 years 11 months. Note: The student will be tested in a one on one setting over the several testing sessions.
	Subtest 1: Visual & Auditory Learning Subtest 2: Letter Identification Subtest 3: Word Identification Subtest 4: Word Attack Skills Subtest 5: Word Comprehension Subtest 6: Passage Comprehension	Subtest 1: Numeration Subtest 2: Algebra Subtest 3: Geometry Subtest 4: Measurement Subtest 5: Data & Analysis and Probability Subtest 6: Mental Computation & Estimation Subtest 7: Addition & Subtraction Subtest 8: Multiplication & Division Subtest 9: Foundations of Problem Solving Subtest 10: Applied Problem Solving	Subtest 1: Phonological Processing Subtest 2: Math Concepts & Application Subtest 3: Letter & Word Recognition Subtest 4: Math Computation Subtest 5: Nonsense Word Decoding Subtest 6: Writing Fluency Subtest 7: Silent Reading Fluency Subtest 8: Math Fluency Subtest 9: Reading Comprehension Subtest 10: Written Expression Subtest 11: Associational Fluency Subtest 12: Spelling Subtest 13: Object Naming Facility Subtest 14: Reading Vocabulary Subtest 15: Letter Naming Facility Subtest 16: Listening Comprehension Subtest 17: Word Recognition Fluency Subtest 18: Oral Expression Subtest 19: Decoding Fluency **

Recommendations

Kaufman Test of Educational Achievement- 3

When administering the test, it is important to give the student frequent breaks so that he can retain his focus and better comprehend the questions. A recommendation would be to give the student breaks every 15-20 minute period so that he can refocus himself. This would help him perform better and more accurately on the tests. Additional support in the area of mathematics would be beneficial for the student to strengthen his skills overall. Continued services for speech would also be recommended for the student.

KeyMath-3

Through this assessment the student needed frequent breaks, we recommend that the student receives frequent breaks to allow the student to focus during the test. The student would benefit from remediation in addition, subtraction, algebra, geometry, and numeration. He scored below grade level in all of these areas. The student needs a quick remediation in these areas. The student needs to be retaught measurement and data analysis and probability. The student needs to be retaught the foundations in these areas.

Woodcock Reading Mastery Test- Revised

The student needs remediation with word comprehension, specifically with antonyms and synonyms. He understands that antonyms are the opposite but he is unable to produce a word that means the opposite and therefore just places "not" in front of the word. He also understands that synonyms are the same but again he is unable to produce a word. For this we recommend expanding the student's vocabulary through teacher modeling using explicit instruction and repeated practice.

Conclusion

We accept two of the three hypotheses. The student's overall standard score was within one standard deviation of the mean on the Kaufman Educational Test of Achievement with a standard score of 87 and the Woodcock Reading Mastery Test with a standard score of 91. We reject the hypothesis that he would score within one standard deviation of the mean on the Mathematics Assessment. He scored two standard deviation below the mean on the KeyMath Assessment-3 with a standard score of 83. We believe that his ADHD affected his ability to sit, focus, and put forth his best effort for a prolonged period of time while taking the tests.

References

ADHD Overview. (n.d.). Retrieved April 19, 2017, from <http://www.mayoclinic.org/>

Connolly, A. J. (2007). KeyMath-3 diagnostic assessment: Manual forms A and B. Minneapolis, MN: Pearson

Kaufman, A. S., & Kaufman, N. L. (2014). Kaufman test of educational achievement. Pearson

U.S. Department of Education. (2013). 32nd annual report to Congress on the implementation of IDEA. Washington DC: Author.

Van de Ven, S., Kroesbergen, E., Boom, J., & Leseman, P. (2011). The development of executive functions and early mathematics: A dynamic relationship. British Journal of Educational Psychology, 82, 100-119.

Woodcock, R. N. (1997). Woodcock reading mastery tests-Revised/normative update. Circle Pines, MN: American Guidance Service

**Subtest 19: Decoding Fluency of KTEA was not administered because this test is administered for students 3rd grade and above. The student is in Grade 2.
** Subtest 8: Multiplication & Division of KeyMath-3 was administered but the scoring in 2nd grade is not taken into account.