

**Which research-based strategies will best support an
undiagnosed second grade student with
AD/HD-like behaviors of the inattentive subtype?**

By Maria Pastor-Martire

Dr. Claudia Gentile
EDUC 602: Modes of Inquiry and Research
TCNJ/RTC

Table of Contents

I.	Introduction.....	3
II.	Literature Review.....	6
III.	Research Questions.....	19
IV.	Participants and Methodology.....	21
V.	Collection and Analysis Procedures.....	22
VI.	Findings.....	22
	a. Listening to classical music using headphones	
	b. Highlighting relevant and important information	
	c. Using a mirror as self-monitoring tool while working in a different setting	
	d. Modifying work assignments into smaller parts	
VII.	Implications.....	28
VIII.	Limitations.....	30
IX.	Emerging Questions.....	31
X.	Conclusion.....	32
XI.	References.....	34
XII.	Appendix A: Post Two-Week One-on-One Interview	35
XIII.	Appendix B: Work Completion Chart.....	36

Introduction

As a second grade regular education classroom teacher in Montclair, New Jersey for the past eighteen years, I have faced many daily challenges in meeting the needs of all my students throughout the years. The town of Montclair is a very diverse, eclectic community. It is part of why I love it and yet today, it is also the reason why it is so challenging. In my classroom, I face many daily challenges due to the diversity of the student population. Since my school is a Title I school, I need to continuously target my instruction to students of various socio-economic groups, as well as cultural differences and expectations. In addition, our district is committed to mainstreaming students with special needs and providing inclusion opportunities for all learners. The circumstances become even more difficult when a teacher is faced with twenty four students in a classroom and some of those students are diagnosed with Attention-Deficit Hyperactivity Disorder (AD/HD) or demonstrate AD/HD-like behaviors.

This paper introduces the topic for my research project, describes circumstances which led me to focus on this topic, includes a literature review of five articles that reinforce my thoughts on the topic, explains in detail my methodology of data collection, and discusses my findings and the possible implications for future teaching experiences.

I want to start off by stating that I believe each and every child can learn in a developmentally-appropriate environment where the child is valued as an individual. However, I struggle as an educator each year with the children that are “just on grade level” but have extremely poor work habits and study skills. It frustrates me when I cannot provide them with additional resources because their test scores do not show a discrepancy even though their work habits do. These children go under the radar even though teachers will often verbalize their concerns to colleagues, administrators, and parents. Inattentive AD/HD children are typically

quiet in class and not behavior problems. Yet, as educators we worry about their inability to complete work, stay focused, and always appearing to be “daydreaming.” These children often need many verbal reminders, preferential seating near an adult, redirection to task at hand, and visual posters. Despite these attempts, their report cards often reflect that work habits need improvement and raise concerns about poor independent work skills. I worry about their success as they leave my classroom and move forward to another grade, another school, and another path in their lives.

“Audrey, please pay attention.”

“Audrey, do you need help?”

“Are you okay? Stay focused on your work.”

Despite the many verbal cues and reminders, Audrey struggles to stay focused and on task in my classroom. From this one child, and many others in past years, I chose to target my research project on ways in which classroom teachers can best support unclassified children with AD/HD-type behaviors. My project has been a case study on this one seven year old child-Audrey. Through my research and experiences, I have explored best practices that served to support this second grade girl who has yet to be classified with AD/HD but repeatedly displays signs of this disorder on a daily basis. I learned and implemented specific strategies needed to best help her in my regular education classroom and believe I have improved her ability to stay on task. The research methodologies I used had been found to be successful with students already diagnosed with AD/HD, with a focus on inattentiveness rather than hyperactivity.

Presently in my second grade classroom, there are 14 girls and 10 boys. Six of the 14 girls are African-American, six are Caucasian, one Hispanic, and one Asian. Of the 10 boys, 3 are African-American, 5 are Caucasian, and two are Hispanic. Six of the children were below

grade level at the beginning of the year in reading and/or math. The children are with me for a majority of the time for reading, writing, and math instruction. Five of the children receive free/reduced school lunch. Currently, three children are being evaluated by the school's Child Study Team but none are classified yet.

Audrey has been in my classroom for eight months. At the beginning of the school year, her academic records showed Audrey to be performing on grade level in all areas. As September progressed, I began to notice that she would appear to be daydreaming most of the time and her work was often incomplete. I continued to monitor her class work and began to notice that it was very hard for her to finish independent work on time compared to her peers. In addition, her writing was very difficult to read and she needed constant reminders to leave spaces between words. As such, I arranged a parent/teacher meeting in early October to discuss my concerns with the family.

During our meeting, her mother informed me of her concerns as well. She shared with me her family history of dyslexia and that Audrey's older brother was diagnosed with dyslexia in the third grade. Her mother felt very strongly that Audrey should be evaluated by our school's Child Study Team. Shortly after our parent/teacher meeting, we all met with the Child Study Team. After reviewing Audrey's academic records at the time, it was noted that Audrey would not qualify for any type of services at this point since she was performing on grade level in all academic areas. The Child Study Team further informed me that I would need to go through a process called Intervention and Referral Services (I & RS). I would need to show documentation of strategies that were implemented in areas of concern with specific targeted practices for a minimum of six weeks. At the time, I spoke to my principal and she informed me that I would

not need to do this since Audrey's academic records were on grade level and she was meeting all the benchmarks.

As the year progressed, I became increasingly concerned about Audrey's work habits and her inability to complete independent work in a timely fashion. She had been still meeting the major benchmarks in reading and math but her work habits were really poor. Daily class work, homework, and quizzes were inconsistent. As such, I had become extremely concerned about her inability to meet the demands and rigor of the new Common Core State Standards. As time went on, I continued to worry about her readiness for third grade.

Students with AD/HD have many challenges that impair their academic and social success. It is pertinent that teachers and parents work side by side to implement as many strategies and interventions possible to truly help these children succeed in life. This research project has provided me with some insight as to how I can best support Audrey, who is not classified, in my regular education classroom. In doing so, it is my plan to provide the family with instructional strategies that would help her at home as well. Through this process, I became very excited about learning which AD/HD techniques I could best apply to other similar learners in the future!

Literature Review

My research into this topic began with a review of an article entitled "Understanding Girls with Attention Deficit/Hyperactivity Disorder (ADHD): Applying Research to Clinical Practice", written by Soffer, S.L., Mautone, J.A., & Power, T.J. (2008). The article started by explaining that the majority of children diagnosed with AD/HD are boys, therefore much of the research in the past has been primarily on boys. Girls are less aggressive and disruptive than boys and thus more likely to experience anxiety and depression as they struggle with growing

social and academic demands. In addition, girls work hard to hide their inattention, making it difficult to accurately identify inattentive AD/HD from the hyperactive/impulse type (Soffer, et al., 2008).

The article explained that there are three subtypes of AD/HD. The hyperactive/impulsive subtype (termed AD/HD-HI) is characterized by a girl's hyperactivity, which is easily identified because her intrusive behavior appears similar to that of boys with AD/HD-HI. The second subtype of AD/HD is the inattentive type (AD/HD-I). These girls bring much less notice to themselves in the classroom. They may daydream, have difficulty following directions and completing classroom assignments. They are also typically messy, disorganized, and are described as being sweet and shy, and as such may internalize their confusion, frustration and low self-esteem (Soffer, et al., 2008). Audrey's school behaviors were and mostly continue to be very closely connected to these descriptors. The third subtype of AD/HD is called the combined type, or AD/HD-COM. These are girls who display symptoms of both the AD/HD-HI and AD/HD-I subtypes.

According to the article, when comparing girls with AD/HD and girls without AD/HD, the AD/HD group had demonstrated higher rates of school problems and earned lower scores on tests of intelligence and academic skills. However, rates of reading disability did not differ between groups (AD/HD -I, AD/HD-COM, and non-AD/HD). In this study, girls with AD/HD-COM were more rejected by their peers socially than girls with AD/HD-I. However, girls with AD/HD-I demonstrated a greater deal of social withdrawal than any other group, making them more socially-isolated but not necessarily rejected by their peers. In addition, girls with AD/HD-COM exhibited a higher degree of relational-type of aggression, such as spreading rumors and gossip, withdrawing friendship, and excluding peers from activities (Soffer, et al., 2008).

The article went on to describe that both elementary-aged girls with Combined Type AD/HD and girls with Inattentive Type, continued to demonstrate many problems at a five-year follow-up point. These problems included the presence of AD/HD symptoms, disruptive behavior disorders, internalizing symptoms, social competence difficulties, academic performance deficits, and the need for special education services. These findings were interpreted to support the persistence from early childhood to adolescence of AD/HD symptoms (inattention even more so than hyperactivity/impulsivity). Interestingly, girls diagnosed with AD/HD-COM at baseline no longer met the criteria for this disorder after five-years, but instead met the criteria for either AD/HD-I only or no longer met diagnostic criteria at all (Soffer, et al., 2008).

Finally, the article compared boys with AD/HD and how they differ from or are similar to girls with the same condition. Typically, girls present for clinical evaluation later in development and have a different AD/HD symptom profile than boys. Boys exhibit greater levels of hyperactivity, conduct disorder and other externalizing behaviors, internalizing symptoms, and peer aggression than girls. Girls however, have a greater chance of internalizing rather than externalizing symptoms. Both girls and boys diagnosed with AD/HD, however, experience similar degrees of functional impairment due to their symptoms. Girls were found to be diagnosed with AD/HD-I twice as frequently as boys, while boys were more likely to be diagnosed as AD/HD-COM (Soffer, et al., 2008).

Early identification of the presence of AD/HD of any form is an important component to preventing the frustration experienced by children and families because of the impact of this condition on school, home, and peer social interactions. Furthermore, due to the notable

differences between boys and girls as to how AD/HD symptoms manifest, these differences have implications for the importance of differentiating evaluation procedures (Soffer, et al., 2008).

This article raised several questions. Why is there not more awareness in our schools about the differences between how AD/HD manifests in girls as compared to boys? How do we directly address the Inattentive type of AD/HD regardless of gender? What are some methodologies for helping teachers better identify AD/HD of the Inattentive type when grades do not tell the whole story, as is the case with Audrey? These are some questions that I feel were not adequately addressed in this article. In addition to identifying which subtypes kids with AD/HD fit into, I believe teachers need to have a comprehensive plan to assist the child with any form of AD/HD. This includes asking the administrators and other support staff to be involved in a unified effort to implement best practices that will ultimately benefit Audrey or any other child with AD/HD-type behaviors in all aspects of their lives now, and in the future.

One strength of this article was that it discussed the importance of developing more effective methods of screening for AD/HD in community-based settings such as schools. Boys get all the attention because their type of AD/HD is easier to recognize and refer. But educators need to have a solid understanding of the differences in the expression of AD/HD symptoms and related problems between boys and girls. The article fairly expounded on these discrepancies in today's schools.

A weakness I found with this article is that it identified the needs of girls with AD/HD but did not address how to fulfill those needs. For example, girls tend to internalize rather than externalize symptoms. The article did not cover just how or if we, as their teachers, are supposed to remedy their internal emotional frustrations and social issues, which have nothing to do with

academics. It is very frustrating since teachers are held accountable for children's academic success but are not given enough resources or time to develop their social and emotional needs.

In conclusion, I believe this article has brought awareness to the challenges elementary school girls with undiagnosed AD/HD of the Inattentive type, such as Audrey, must face throughout the school day. If these issues are not addressed at the early age of seven as in Audrey's case, research indicates that her symptoms of daydreaming, disorganization, and overall inattentiveness will persist into her teenage years, along with increasing problems with her peers and family as a result.

Whereas the first article I reviewed offered minimal real-world strategies for teachers to maintain the attention of Inattentive-type AD/HD students, my second literature review was based on a chapter of a book entitled "How to Reach and Teach Children with ADD/ADHD: Practical Techniques, Strategies, and Interventions (Rief, 2005). This one particular chapter offered a wealth of useful strategies I could employ almost immediately to help Audrey. Most of the techniques were listed in bullet-form throughout the chapter, since there were so many.

There was a section on getting and focusing AD/HD students' attention using various auditory and visual techniques, such as: being playful, using humor, modeling excitement and enthusiasm, using graphic organizers and posting a few key points to be attentive to or listen for on the board. Then the chapter spoke about the importance of active participation and offered ways for keeping students engaged, again listed in bullet-form. Some examples included moving around the classroom, increasing the amount of teacher modeling and guided practice, structuring lessons using small groups more often, and implementing motivating computer programs for specific skill-building (Rief, 2005).

The chapter continued with a section on effective questioning techniques to increase student response opportunities, followed by a section with a long list of strategies for keeping students on-task during seatwork. The chapter also offered various tips for helping inattentive, distractible students along the way. Some tips included providing preferential seating in the front of the classroom, increasing teacher proximity, using physical contact (hand on shoulder or back), and having students clear their desks of distracters (Rief, 2005).

The chapter finally ended with a discussion of the importance for students with AD/HD to employ self-monitoring strategies so as to become more aware of their behaviors, with a section on self-regulatory techniques. Some of these techniques include the use of pre-recorded tapes with intermittent beeps, ringing a bell or other auditory signal (Rief, 2005). They also mentioned using picture prompts and cues at the student's desk as visual reminders of expected behaviors. The teacher can also directly teach students to self-monitor and to set individual short-term goals for improvement.

The main strength of this article was also its weakness. While it provided dozens upon dozens of helpful strategies to assist the classroom teacher when working with elementary-aged children with AD/HD, all that information at once was overwhelming, and it was not specific for inattentive-type AD/HD students. Many of these strategies I have already used in my classroom, with some degrees of success. But questions remained: Which of the strategies listed have proven to work best when used by early childhood teachers? Which hardly work at all with inattentive learners and are not worth pursuing? My personal feeling is that I might have gotten more out of this chapter if I knew which handful of techniques were proven to work best based on teacher experience and research.

The next article I reviewed was called, “School-Wide Strategies for Managing Off-Task/Inattention”. This article took the approach that, just because a student may present with AD/HD-like behaviors in the classroom, teachers should not overlook other explanations, besides AD/HD, for student off-task behavior (Intervention Central). It may be that the student not paying attention is mismatched to instruction or preoccupied by anxious thoughts. The student may be off-task because the lesson was poorly-planned or presented in a disorganized manner. The article stated, “teachers who focus on making their instruction predictable, orderly, and highly motivating find that they can generally hold the attention of *most* of their students most of the time” (Intervention Central).

I want to mention at this point that I do not believe this has been the case, neither with Audrey, nor with me. It is my firm belief, based on 18 years of experience in the classroom that Audrey exhibits AD/HD inattentive-type symptoms and that she needs extra resources. Additionally, I do not believe the fault lies with me or my lesson plans. However, I can see how these factors can be possibilities for some children, and that we need not jump to the conclusion that just because a child is sometimes inattentive, they have a disorder like AD/HD.

The article then offered some school-wide strategies for managing off-task/inattentive behavior in general. For example, it encouraged teachers to capture students’ attention before giving directions to ensure students’ full understanding. Students should be encouraged to participate in class, especially if they cannot accurately predict when they will be called upon. We should also stand in proximity to inattentive students to keep them more on task, give clear instructions and opportunities for choice, make activities stimulating, provide attention breaks, and use preferential seating, among others strategies listed.

I had several opinions about this article. First of all, I found its strength in its mentioning that not all inattentive students should immediately be referred for services. If a student is off-task on occasion, it could also be a number of teacher-related factors. Its overall weakness was that it used mostly generalities as techniques to help off-task children. There were no clear research-based strategies listed as interventions for children with more severe inattentive disorders such as AD/HD. It also stated that these strategies can hold the attention of “*most*” students, but we need to reach every student in our classrooms. My overall opinion of the article was that, since it was not really geared towards AD/HD, we do not know if these strategies are sufficient for children with the disorder. Additionally, no age or gender distinction is made. So I was not sure if the strategies listed were for elementary-aged children or kids in upper grades, and which work better for girls as opposed to boys.

Overall, I liked the article because it was concise and offered a different perspective as to why children in general may be off-task at times. However, it was too general. I was looking for more substantial and precise research-based techniques to best support Audrey, whom I still believe is a candidate for a diagnosis of AD/HD – Inattentive type.

This brings me to the next article I reviewed, entitled “Theory and Evidence-Based Strategies for Children with Attentional Problems” by Zentall (2005). This article discussed only a handful of evidence-based techniques for helping young children with Attention Deficit Hyperactivity Disorder of the Inattentive type (ADHD-I) specifically, and discussed how these students are commonly identified.

My student, Audrey, appears to meet all the descriptors listed in the article, in my opinion. The article stated that inattentive symptoms are more strongly related to academic disabilities as compared to ADHD of the Hyperactivity-type (ADHD-H). Retention figures for

ADHD-I students were found to be 72% as compared to other sub-types of ADHD, where the retention rate was only 17% (Zentall, 2005). Social unpopularity was also prevalent among the ADHD-I group, according to the article, especially among elementary-aged girls. The author stated that this is probably due to their greater social withdrawal, and higher rates of anxiety and depression. Zentall theorizes that ADHD-I students are not stimulated enough based on something called the “optimal stimulation theory” (OST). As a result, individuals tend to produce stimulation through shifts in attention, daydreaming, talking, changing the topic of conversation, or by seeking social/emotional stimulation and experiences. Across various age levels, children with ADHD have an attentional bias for novelty. ADHD kids, more so than their peers, pay attention to what is “brighter, bigger, more intense, colorful, louder, or moving.” (Zentall, 2005)

“Selective inattention” is the term used in the article to describe what an ADHD-I child will do when task demands are high. They actually function best when taking in the maximum amount of novel stimulation possible. The major implications for instruction can be derived from an understanding that any strong stimulus (negative or positive) has the capacity to captivate and reinforce the attention of children with ADHD-I. Based on these general principles, specific evidence-based practices were included in the article for guiding and maintaining selective attention. These were: changing the task, changing task instruction or task sequencing and between-task events, providing practice, changing the setting, and changing the consequences or feedback for task performance (Zentall, 2005).

When changing the task, we are told to eliminate irrelevant cues, such as non-relevant visuals, engaging visual stimuli, verbal detail within listening tasks, and conversations during complex thinking tasks. Teachers should also highlight relevant information using global cues or

models to focus attention onto the “big picture” early. We can also use verbal highlighting with vocal alterations in tone, speed, and pauses as signals to important words during listening tasks, as well as use verbal questions to direct attention. Use of color for bold emphasis, animation, and/or verbal cues are important strategies for working with ADHD-I learners.

For changing task instructions, sequencing, or between-task events, Zentall (2005) tells us to begin with simple formatting and easier tasks that get more difficult and more complex after a period of practice. Students should also be encouraged to set their own goals and evaluate their own performance in relation to their own previous work, not in comparison to the work of others. In between tasks, teachers should increase opportunities for child-initiated movements during the task, especially towards the end, and just increase the chance for movement in general, which is especially beneficial for children with AD/HD.

To provide practice, educators should provide additional practice to reduce task selectivity requirements (Zentall, 2005). According to research, there is a positive relationship between length of time examining a visual stimulus and subsequent understanding of it. Practice sessions should be short, however, for children with AD/HD. Additionally, changing the setting provides setting cues for students to self-monitor their own immediate behavior and internal standards. This can be accomplished through the use of a mechanical device which signals children to self-attend to their behavior or internal emotional reactions. It can also be accomplished by adding reinforcement that the child self-administers, such as stickers, stars, or stamps, for example. A teacher can add mirrors to increase task performance and accuracy as well.

To maintain attention by changing the setting, music and other pleasant sounds can also be added to the classroom. It has been found in past research that elementary children with

AD/HD perform better in the presence of music than in silence or with speech in the background (Zentall, 2005). Teachers can also enrich the classroom with visual and auditory novelty items to keep their attention, as well as physically by changing their seat in the classroom.

Changing the consequences or feedback for task performance means using cross-modal response options (Zentall, 2005). This means that students with AD/HD perform better when teachers provide auditory feedback for visual tasks and visual feedback for auditory tasks. It also means increasing the intensity of positive feedback along with the use of “friendly” toys or candies. Verbal praise alone does not appear to improve on-task behavior (Zentall, 2005). Teachers should also increase the immediacy and frequency of feedback. Immediate feedback provides increased stimulation to help sustain attention, while frequent feedback encourages sufficient practice and helps students with AD/HD to behave more like their peers.

Finally, the article discussed that ADHD-I students exhibit problems of “sustained attention.” Their sustained attentional deficit is usually related to the length, familiarity, or repetitiveness of the task at hand (Zentall, 2005). The author states that the most effective intervention for sustained attention is psycho-stimulant medication. Since this is not an option with Audrey, especially since she has not even been diagnosed, we need to work with the second most used strategies for sustaining attention – the behavior modification and cognitive behavioral strategies mentioned above (Zentall, 2005).

The article then advocated against the use of cubicles (an intervention used in the past) for children with ADHD-I, which only serve to isolate children socially and educationally and produce no academic gains (Zentall, 2005). It concludes by stating that the specific strategies mentioned are effective and grounded in theory with over 30 years of research on children with ADHD and their responses to stimulation.

Overall, I liked this article a lot. It was one of the most relevant and informative to me in my struggle to help Audrey. In fact, most of the strategies I employed for this research project came from this article. In my opinion, Audrey is definitely of the inattentive type of AD/HD. Its main strength was that it provided a handful of detailed evidence-based strategies based on long-term research on children like Audrey. It definitely provided me with helpful strategies that I started to incorporate in my classroom daily almost immediately. It was very informative because it enlightened me with new information into how ADHD-I children perceive the world around them. One weakness I found was that it was not specific to age/grade-level or gender. It did not differentiate much between the ways ADHD-I manifests in girls as opposed to boys. Much of the time, I was not sure if these strategies would work better with boys rather than girls, since most research is geared towards boys with AD/HD. As a result, I took a “try and see” approach to these techniques with Audrey in my classroom. But I felt the quality of the interventions and the evidence-based information presented in this article was excellent nonetheless.

Based on the literature I have already reviewed, I have discovered that children with AD/HD of the Inattentive type in elementary-aged children, such as Audrey, can suffer greatly in silence, with the inability to get the help needed because their grades are on-grade level, disqualifying them from evaluation by the Child Study Team in my school. So I wondered what the long-term consequences of not testing someone like Audrey could mean for her in the future.

I have already discussed some of the short-term consequences, such as low-academic performance as the workload increases, greater chance for retention, low self-esteem, social withdrawal and unpopularity, and increased risk of anxiety and depression, among others. But what are some of the long-term implications for not getting a child such as Audrey the help that

she needs at an early age? To answer this question, I researched and reviewed an article called, “The Impact of ADHD Symptoms and Global Impairment in Childhood on Working Disability in Mid-Adulthood.” (Mordre, M., Groholt, B., Sandstad, B., & Myhre, A.M., 2012).

The article started off by discussing that there is generally a decrease in AD/HD symptoms into adulthood (with the exception of inattention, which seems to persist). The author stated that there is considerable evidence that the long-term outcome of child-psychiatric disorders, such as AD/HD, is associated with impaired functioning and continuity of symptoms into adulthood (Mordre et al., 2012).

A 28-year follow-up study was done which compared the outcome differences into mid-adulthood between children with AD/HD and those with other disorders in an in-patient population. It consisted of 257 child-psychiatric in-patients (AD/HD, emotional disorders, mixed disorder of conduct and emotional) with intellectual levels within the normal range, 68% boys and 32% girls, with a mean age of 8.7 years. Fifty-three of these children had established AD/HD. Fifty of them were considered of the Combined type, and three of them were described as having ADD, or solely the Inattentive type. The mean age at follow-up was 36.9 years. At follow-up, 49 people (19%) were receiving a disability pension (normal disability rate in the general population was estimated to be about 5%), with no significant gender differences. Of these 49 people, sixteen (30%) had an original diagnosis of AD/HD as children. The results of the study showed that AD/HD in childhood was highly associated with working disability in mid-adulthood (Mordre et al., 2012).

From this study, the article stated that “poor academic achievement reported for AD/HD individuals may also lead to low-grade occupations.” (Mordre et al., 2012) The article

concluded by discussing the importance of early intervention programs in schools and pre-schools, given the early onset and often chronic course of AD/HD.

This article was very interesting and it helped prove my original point, which was that Audrey needs to get diagnosed as soon as possible. AD/HD can be debilitating not just during a child's early school years, but throughout that person's lifetime, as this study illustrates. The study's strengths included the long follow-up period and relatively large sample of participants, giving it more credence. The main weakness of this study and article, in my opinion, was that the only measure used at follow-up was whether or not that same person was collecting disability, which may be insufficient to judge his/her future outcome. Furthermore, of the 53 participants with AD/HD, only 3 were of the Inattentive type, which made it statistically improbable to predict their outcomes as a subgroup. In addition, some questions still remain that this article did not adequately address. For example, what factors precede the development of AD/HD in children? Is there a genetic or environmental cause? Is there a way to halt the progression of symptoms into adulthood, and were there any participants who were "cured" or improved significantly over time and did not participate at the completion of the study? Overall, it was reassuring to know that long-term studies of this kind are being conducted, however. In my opinion, research of this nature can serve to help and guide this student population (and parents) to resources that can best help them at an early age, thereby improving their chances in life.

Research Questions

During this action research process, there were many goals that I had wanted to accomplish. Specifically, I chose to target my focus on the following questions: What are specific strategies that I can implement in my regular education classroom to help support

Audrey's ability to pay attention and to stay on task? What research-based techniques are most beneficial for children with AD/HD-like behaviors of the inattentive subtype? What further insights will I acquire as to how I can best support Audrey, who is not diagnosed with AD/HD, in my regular education classroom?

Literature Review Graphic Organizer

<p>Article 1 <i>Understanding Girls with Attention Deficit/Hyperactivity Disorder (ADHD): Applying Research to Clinical Practice</i></p>	<ul style="list-style-type: none"> • Defines the three subtypes of AD/HD • Compares girls with and without AD/HD • Discusses social aspects of AD/HD in girls • Compares boys and girls with AD/HD symptoms • Highlights the importance of early identification
<p>Article 2 <i>Attention!! Strategies for Engaging, Maintaining, and Regulating Students' Attention</i></p>	<ul style="list-style-type: none"> • Provides a wide assortment of useful techniques for getting and focusing AD/HD students' attention • Discusses the effectiveness of questioning techniques to increase student response opportunities/keeping students on-task during seatwork • Emphasizes the importance of self-monitoring strategies with AD/HD students
<p>Article 3 <i>School-Wide Strategies for Managing Off-Task/Inattention</i></p>	<ul style="list-style-type: none"> • Proposes a different approach to inattention problems • Highlights that teachers should not overlook other explanations for off-task behavior • Provides school-wide strategies for managing off-task/inattention behavior in general
<p>Article 4 <i>Theory and Evidence-Based Strategies for Children with Attentional Problems</i></p>	<ul style="list-style-type: none"> • Describes a link between inattentive symptoms and academic disabilities • Describes the Optimal Stimulation Theory (OST) • Defines Selective inattention • Details implications for instruction • Provides specific evidence-based practices for guiding and maintaining selective attention
<p>Article 5 <i>The Impact of ADHD Symptoms and Global Impairment in Childhood on Working Disability in Mid-Adulthood</i></p>	<ul style="list-style-type: none"> • Examines the long-term outcome of children diagnosed with AD/HD • Discusses the findings of a 28-year follow-up study comparing outcome differences into mid-adulthood between children with AD/HD and those with other disorders

Participants and Methodology

For this case study, my plan consisted of implementing research-based techniques in the classroom on one child, Audrey, during one instructional period per day for eight weeks. Based on the findings during my literature reviews, I implemented four specific evidence-based strategies for children with attentional problems. Each strategy was used for a two week period and concluded with a one-on-one interview to get some feedback from the participant on that particular targeted strategy (Appendix A).

The first strategy was listening to music using headphones while working on assignments independently and keeping an individual work completion chart (Appendix B). The second technique involved highlighting relevant and important information (using a highlighter and vocal cues) during independent assignments with a continuation of individual work completion chart. The third technique was using a mirror for self-monitoring of behaviors while working in a different setting in the classroom with a continuation of individual work completion chart. The last strategy involved modifying work assignments into smaller parts (cutting work into smaller chunks by halves) with a continuation of individual work completion chart.

Evidence-Based Strategies Graphic Organizer

<p>March, 2014 (two weeks)</p>	<ul style="list-style-type: none"> • Technique 1: Listening to music using headphones while working on assignments independently and keeping an individual work completion chart • One-on-one interview about Technique 1
<p>March, 2014 (two weeks)</p>	<ul style="list-style-type: none"> • Technique 2: Highlighting relevant and important information (using a highlighter and vocal cues) during independent assignments with a continuation of individual work completion chart • One-on-one interview about Technique 2

<p>April, 2014 (two weeks)</p>	<ul style="list-style-type: none"> • Technique 3: Using a mirror for self-monitoring of behaviors while working in a different setting in the classroom with a continuation of individual work completion chart • One-on-one interview about Technique 3
<p>April, 2014 (two weeks)</p>	<ul style="list-style-type: none"> • Technique 4: Modifying work assignments into smaller parts (cutting work into smaller chunks by halves) with a continuation of individual work completion chart • One-on-one interview about Technique 4

Collection and Analysis Procedures

During the study, the data that I collected included the work completion chart, student work samples, and one-on-one interviews conducted four times with the student at the end of each two-week time period. I collected and analyzed my data based on journaling notes, classroom observations of student's work performance, and timely completion of independent work. The work completion charts were used as documented records of ability to self-regulate and complete work on a daily basis. Furthermore, I used the notes from the interview at the end of each two-week period to gain a better understanding of the strategies that were most helpful and beneficial from the student's perspective.

Findings

By implementing specific research-based strategies designed to help children with attentional problems, I have gained further insight on ways to help Audrey and other similar undiagnosed AD/HD children. The one thing that was very obvious during my focused study for two months was the observable changes that I noticed in Audrey's self-confidence, motivation, and overall work ethics. During this case study, Audrey increasingly displayed signs of confidence, happiness, and less insecurities. In part, it was probably the one-on-one attention that she was getting from the teacher. The other major influential factor throughout the entire time frame was the work completion chart. During this forty day study, Audrey repeatedly filled

in her chart willingly and on her own. After each task, she would draw in a “star” if her work was completed on time or an “X” if she was unable to complete the work during a designated time frame. Audrey enjoyed having ownership in filling in the chart and had an 82% success rate during the eight weeks. The work completion chart was kept on a clipboard on my desk. For the majority of the days, Audrey would go to my desk area and fill in the chart without needing teacher support. In my journal, many times I expressed my awareness of Audrey’s newfound independence and self-confidence. Her eagerness to fill in the work completion chart was evident from the start.

Based on the four interviews that were conducted, Audrey always indicated that she enjoyed using the chart and that it helped her stay on task. After being asked about whether or not she liked using the work completion chart, Audrey noted repeatedly that “Yes, I like it because it makes me see how much work I am doing. Having the chart lets me know that I’m doing my work and when I don’t have it, I don’t know if I’m doing my work.” The work completion chart consistently helped Audrey in self-monitoring her time and task at hand.

During the eight week period, it was noted in my journal that Audrey was feeling more confident about her ability to complete work on time and to stay on task during that specific time of the day. In fact, Audrey clearly felt more successful and confident about school. She made me a homemade card that read, “Mrs. Martire is a wonderful teacher” early on in March after I started this process with her. Three weeks later, Audrey came in one morning very excited. She handed me a poster that she had made at home. The poster stated that she and her family were nominating me for a special teacher award called The Weston Award. This award is given yearly to teachers in the Montclair public school system for creativity, high expectations, energy and concern for students.

a. Listening to classical music using headphones

In my initial research, I learned that changing the setting and adding pleasant sounds can help children focus in the classroom. During the two weeks that Audrey was listening to classical music on headphones in the computer area, Audrey demonstrated a desire to move and work on independent tasks on a daily basis during that one specific time frame. In my notes, I documented her willingness to work in a separate area and to set up her “listening station.” Audrey repeatedly walked to the back of the room to the computer table, set up her headphones, and played the classical music on the computer. She did not need any reminders and, in fact, smiled at me regularly and shared with her peers that “I am listening to music that helps me think better!”

During the first two weeks that Audrey worked on math assignments while listening to classical music, I noticed an improved ability to complete work on time with 80% or better accuracy of skills presented. During my close observations, I began to notice that the mistakes being made were not necessarily about lack of understanding of the content area but more closely related to carelessness. In my journal notes, I documented errors in copying words from the top of the page to the bottom, reversals of letters and numbers, and on one account, she was working on the wrong assignment page because she had made a mistake when looking at the board to find the page that needed to be completed. Furthermore, I had written many statements in regards to careless errors as opposed to not understanding a mathematical concept. In fact, it was obvious that the work was being completed on time but there was a strong need to slow down and be more careful.

From my interview with Audrey, I found a significant difference between my own feelings as a teacher and the student’s perspective on using this technique. My journal entries

documented that Audrey was happy, eager, and felt success using this technique. However, in my interview, I discovered that Audrey felt distracted by the headphones and would prefer not to use them in the future. She commented, “It’s easier without headphones because they might not distract me. Keeping them on was distracting because they sometimes feel like they’re going to come off.”

b. Highlighting relevant and important information

According to research, the use of color for bold emphasis is an important strategy for helping students with attentional problems. During the two week period in which I implemented the second strategy of highlighting relevant and important information on independent assignments, Audrey did not show growth in her ability to complete work accurately. She continued to use the work completion chart as a self-motivator and was able to complete the work within a given time but with many errors. The quality of the completed work was inconsistent and the pattern of careless errors persisted. Audrey was a lot more distracted and needed to be redirected to stay on task. During my observations, I noticed an increase in distractions overall. Audrey was talking more to her peers at her table, playing with small objects in her desk such as a lip gloss, and daydreaming more often.

At the conclusion of the two-week period, my personal observations seemed to be consistent with Audrey’s personal beliefs about highlighting as a strategy. Audrey demonstrated a strong sense of confusion about this technique. She positively noted that “when something is highlighted, it means that I have to make sure that I do it. There’s certain times when I think it’s highlighted it means something different than what it is.” While Audrey had a clear sense that something highlighted was important, there seemed to be an underlying misunderstanding about the task at hand. Audrey would answer the highlighted questions but was, however, uncertain

about the expectations and/or the concept. During this time, all the second grade students in the school were assessed on a Measurement Math Unit, which is one of the four math benchmarks in our district. Prior to the test, I highlighted important components for Audrey and had her complete the test. For the first time, she did not pass the benchmark and scored a 64%. I noticed mistakes with reversals of numbers (47 was written as 74 in computing an addition problem) and problems left unanswered (two were unanswered even though I had provided her with verbal cues to underline the important parts of the number story). Once again I noted the obvious implications in my journal, “it’s not about completing the work but the accuracy of it.”

c. Using a mirror as self-monitoring tool while working in a different setting

A main area of focus for measuring student growth is the ability to self-monitor and self-regulate. During the two weeks that Audrey used an 8 1/2 x 11 inch mirror as a self-monitoring tool, she worked at the teacher’s desk for one specific period per day to complete independent work. In my journal, I made note of a notable difference from the starting point to the end point. Every day, she was excited to leave her team so she could work at my desk. She would move any of my papers and books to the side to set up her work space and then walk over to the window sill to grab the mirror. At first, I noticed that Audrey was highly distracted by the mirror. The first few days, she used the mirror to look at herself repeatedly, play with her hair, talk to herself, and smile while mouthing words under her breathe. Her work effort was minimal and she was unable to earn a star for the first two days on the work completion chart.

After the novelty of the mirror wore off, Audrey started to show improvement in her ability to be more on task and to be less inclined “to play” in front of the mirror. She continued to want to work at my desk and used the mirror once in a while but for only a quick glimpse of herself. By the second week, Audrey seemed unaware of the mirror and was able to stay on task

for a large portion of the time. She was able to earn all 5 stars (100%) during the second week on her work completion chart as compared to the first week, in which she only earned 3 stars (60%).

The mirror was initially a distraction but as time went on and the newness faded, it became less influential. Audrey stated during our third interview that the mirror was sometimes distracting because she didn't use it to see if she was focusing but to look at herself. Even so, she still concluded that she would like to use it again because "it made me focus a little more because I knew what I was doing. Sometimes I used it to see myself and sometimes I could look at me to see if I was focusing because I could see my work in the mirror." At this point in my research, I had written in my journal that Audrey was writing more (quantity) but that the quality of her work needed improvement. My findings once again indicated many careless errors on independent tasks.

d. Modifying work assignments into smaller parts

Research shows that chunking, modifying work assignments into smaller parts, is an effective strategy often used with learning-disabled students. During the last two weeks of the implementation stage of my research project, I used chunking with Audrey every day during one period. On a daily basis, I would take an appropriate independent task and cut the assignment with a scissor to create two parts. One part was handed to her at the beginning of the work period. Audrey was told to complete one part and then hand it in to the teacher so she could then be given the second part. In my notes, I observed that she was happily working at her desk on a regular basis. Audrey would consistently complete the first part of the assignment and then walk over proudly to my desk to get the second part. During this time two-week time frame, she did not need any reminders to refocus or to stay on task.

In my last interview with her, she acknowledged the effectiveness of chunking. She stated that “it helped me a lot. When I use it, I know that there’s only a little more left. I felt like there wasn’t too much to do.” Her newly-gained confidence created within her the ability to allow herself to self-regulate her own behaviors. Of all the techniques used in this study, Audrey rated chunking as the most useful technique that helped her the most, followed by using headphones, then the mirror, and lastly the highlighting.

During my last interview, I concluded the process by asking her what she learned in these two months. Her answer was quite insightful and way beyond her years. She spoke with words of wisdom that will forever reflect my understanding of this process as well. Audrey’s words were as follows:

“They all helped me in different ways. Some helped me focus and some helped me finish. I could focus better using headphones and the mirror. Chunking, highlighting, and the music helped me finish my work. When I moved to a different area, I was not distracted by the people around me.”

As I wrapped up our interview, I prompted her one last time and asked, “What did you learn from this?” Her response was what I was originally aiming for and the ultimate goal of this study: “I can help myself focus and finish my work. Now, I know different strategies. I could fold my paper in half, work in different areas, and sometimes, I can even use a mirror, like at my house!”

Implications

As educators, we strive each and every day to help students feel successful so that they have the skills, confidence, and independent work habits needed to survive in the real world. In starting this research, I was very concerned about Audrey’s inability to stay on task and focus during independent work assignments. From the beginning, Audrey was always sweet, shy, and

pleasant to be around. She lacked confidence and needed strategies to help her during independent work time.

Based on this study, I have realized that students with inattentive-type behaviors benefit highly from having a chart, similar to the work completion chart, to help self-regulate their own behaviors. I think it is very important to continue using a self-regulating chart in the classroom with Audrey. Furthermore, I can now see that it might be useful to develop a chart that would reflect a daily schedule so that she can regulate her own behaviors during different periods of the day.

Furthermore, I plan on using the various techniques for the remainder of the year during different times of the day and in accordance with the various activities being performed in the classroom. Variety seems to be a major need for students that have daydreaming and focusing issues. By providing the student with the choice to work in a new setting, he/she benefits from the movement and novelty of the action. I feel that chunking, especially, can help many learners in the classroom, not just students with inattentive-type behaviors. When using the highlighting technique, I have noticed that it is important to verbally explain the task since the student may not always be aware of the expectations. If using headphones in the classroom, I think it is extremely important to have the student participate in the fitting of the headphones. While Audrey felt that this technique helped her, she worried about the headphones falling off, which took away from the learning process. I think it might even be a good idea to suggest that a student bring in his/her own set of headphones from home, if possible.

After conducting this study, I do not feel that a mirror is a beneficial tool in the classroom. When I decided to implement this technique, I was very curious since it was research based. However based on my observations and the feedback provided by Audrey, I do not feel

that it increases a student's ability to stay focused and in fact can be quite a distraction. It is also not a very feasible tool in a classroom environment of young learners.

Based on journal notes and classroom observations, my findings suggest the importance of providing more instructional support for Audrey. Although Audrey has been reaching most benchmarks throughout the school year, there have been gaps in her class work, quizzes, and tests. Audrey consistently makes careless errors, mistakes, and omissions in her work. There is a strong implication that even though she is making progress, Audrey continues to need small group support, a buddy system, and/or one-on-one guidance at times. Whether or not Audrey is diagnosed with AD/HD of the Inattentive Type or whether it is just a developmental process, in my opinion, there is strong supporting evidence, based on this study, that she would benefit from additional support to help bridge the academic gaps.

Limitations

There were a few limitations to consider that may have affected my action research study. The main limitation involved the time of day in which each technique was administered. It was hard to implement the strategy during the same time each day. Due to the variation in the times, I could not see if there was a correlation between the strategy being used and an increase in her academic performance. Each technique was dependant on an independent task, which forced me to use a specific technique during different subject areas.

I also feel that changing strategies every two weeks may not have provided me with the best evidence as to whether or not a particular strategy was effective or ineffective. The window of implementation was minimal due to the time constraints of the entire project. As a teacher, I would perhaps use one technique for a month in one subject area so that I can get a better

measure of its effectiveness. For future purposes, I would consider extending the time of each strategy being implemented and try to use the technique during one subject area only.

Another problem that surfaced during this project was that there were two variables taking place at the same time. One was inattentive behaviors that needed support and the other was academic gaps. As stated earlier in my research, Audrey has always been “just-on” grade level and I was concerned about her ability to perform on grade level next year with the rigor of the new Common Core Standards. The techniques that I implemented in the classroom were targeted at helping students with inattentive-type behaviors. On one hand, the inattentive problems seemed to improve but her independent work skills continue to need monitoring and support. I do not know if these techniques have helped her academically in any way since there was no pre- or post-assessment tool directly linked to each strategy.

Emerging Questions

Through this process, I have made many discoveries that will enhance my teaching practices, many of which I plan to implement during my teaching career. However, further questions have surfaced from this study that need further study and exploration. Some of these questions are:

- *How does the implementation of such techniques support academic growth?
- *Which techniques are directly correlated with student achievement?
- *Would a work completion chart lose its effectiveness if implemented in all subject areas each day?
- *How can these efforts be maintained in the future by other educators in classroom settings in which a student does not have an IEP or classification?

*How can a teacher continue these individualized practices while supporting all other learners in a second grade classroom?

*What methods are best for supporting young learners with letter and number reversals?

*Will the student be able to self-regulate their own behaviors and effectively use taught strategies ?

Conclusion

By completing this study, I have gained some useful insights about which strategies are most beneficial for undiagnosed children with attentional problems in a regular education classroom setting. I have discovered which of the four strategies were most manageable in such a setting of 24 students. In addition, it was interesting to analyze the four strategies from the perspective of the teacher and the learner. Throughout this process, I came to realize the importance of implementing a variety of strategies to help struggling learners. I have noticed that “no one size fits all” and that “different strokes for different folks” is probably the best way to reach each and every child.

I also took it upon myself to share what I have learned in implementing this research project with Audrey’s family as well, since they have been very supportive from the start. I think this process will also help me in the future with documentation for potential children that might be referred for Child Study Team evaluations. Based on these findings, I plan to use the information gathered from this study to help other students in the future with inattentive-type behaviors as well as AD/HD behaviors. In our district, we meet by grade level once a week and I plan to share my findings with other colleagues when they express similar concerns and frustrations.

As a final point, I feel fortunate to have made all these discoveries through this action research study. Educators are often looking to improve their own practices. As I concluded my study, I now feel I could add a few more tools to my own bag of tricks. I feel confident and

empowered by discovering additional practical ways to reach ALL learners, diagnosed or undiagnosed!

If a child can't learn the way we teach, maybe we should teach the way they learn.

—by Ignacio 'Nacho' Estrada

References

- Intervention Central – Your Source for RTI Resources. *School-Wide Strategies for Managing Off-Task/Inattention*. Retrieved February 10, 2014 from <http://www.interventioncentral.org/behavioral-interventions/challenging-students/school-wide-strategies-managing-task-inattention>
- Mordre, M., Groholt, B., Sandstad, B., & Myhre, A.M. (2012). The Impact of ADHD Symptoms and Global Impairment in Childhood on Working Disability in Mid-Adulthood, *BMC Psychiatry* 12(1), 174-182
- Rief, S.F (2005). Attention!! Strategies for Engaging, Maintaining, and Regulating Students' Attention. In *How to Reach and Teach Children with ADD/ADHD* (pp. 145-161). California: Jossey-Bass
- Soffer, S.L., Mautone, J.A., & Power, T.J. (2008). Understanding Girls with Attention Deficit/Hyperactivity Disorder (ADHD): Applying Research to Clinical Practice, *International Journal of Behavioral Consultation and Therapy* 4(1), 14-29
- Zentall, S.S. (2005). Theory and Evidence-Based Strategies for Children with Attentional Problems Theory and Evidence-Based Strategies for Children with Attentional Problem, *Psychology in the Schools* 42(8), 821-836

Appendix A: Post Two-Week One-on-One Interview

Name: _____ Date _____

Technique # _____:

Dates of Implementation: _____

1. How did you feel about completing your work using _____?

2. Do you think _____ helped you focus more or less on your work? _____ Why? _____

3. Would you like to use this technique again? _____

4. Do you like using the work completion chart? Why or why not?

5. Other (based on student's responses):

Appendix B: Work Completion Chart

Work Completion Chart for _____

Week of : _____

Technique: _____

I will stay focused and complete my work on time.



Focus



Listen



Do my work

Monday	Tuesday	Wednesday	Thursday	Friday	Did you reach your goal?

When I complete my work, I will earn one star in the box. When I reach my goal, I can put my name in the *bucket.

Goal: 4-5 stars

_____ (Student Signature)

Note:

*Bucket-filling is part of our school's established school-wide positive behavior initiative based on research on *The Responsive Classroom*.