

Running Head: ADHD

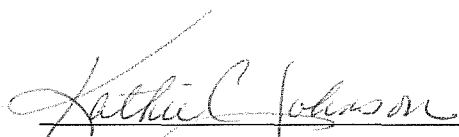
Understanding Attention Deficit Hyperactivity Disorder and
Developing Successful Interventions for the Classroom

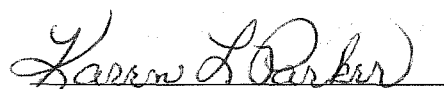
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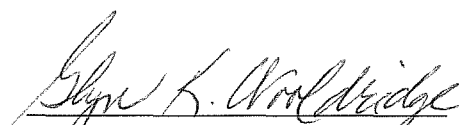
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Abstract

Previously an abundant amount of research has been undertaken concerning interventions that should or should not be used for the treatment of Attention-Deficit-Hyperactivity-Disorder. The problem with prescribing and implementing interventions lies in the controversies that surround them. The number one controversy surrounds the issue of whether or not stimulant medication, commonly Ritalin, should be used as an intervention. A literature-based research approach and original research in the form of a survey and subsequent observations were used to discover whether stimulant medication should be used within the classroom and what forms of classroom interventions and modifications teachers and researchers are suggesting for success. The following research supports both sides of the issue concerning stimulant medication and emphasizes that the prescribing of medication and the development of interventions should be done on individual levels. The hope is that this research will help teachers, parents, and doctors alike in understanding the disorder, deciding whether medication will be useful for a particular student, and aid in the development of successful interventions.

Understanding Attention Deficit Hyperactivity Disorder and Developing Successful Interventions for the Classroom

Statement of the Problem

God created the world for many purposes: one being to create man such that he was unique in appearance, mental capacities, emotions, and many other dimensions. His world is full of various colorful aspects in that everything has its own size, shape, and color. God made the world and its inhabitants through the use of diversity. When looking at children, one notices that this diversity is present in many ways. Every child looks different, has different personality dimensions, and differing abilities. These differences become an extremely important issue when children enter into the classroom. Teachers must be aware of every student's individual needs when planning, preparing, and implementing their lessons. In any classroom, a variety of children of different ability levels and personalities can be found. There will be those students who perform at the average level, those who will need additional assistance, and gifted students. There will also be students who will follow the rules without any problems and those that always seem to be testing the teacher. Consider the following possible scenario as an example of two types of student behavior that many teachers face everyday. Suppose that in a particular classroom, there is a student who is often seen jumping out of his seat, yelling out in class, and rarely ever on task. However, a girl sits behind him, who is very shy and doesn't seem to have many friends and often appears to be in a dream-like state during lessons and many activities. These two students can represent the many students throughout the world that have been labeled as having one of the two

dimensions of Attention Deficit Hyperactivity Disorder (ADHD). Their disorder is very serious and will require modifications in many areas within their lives. From the description of the two students above, it can be inferred that the students will have difficulties within the classroom that affect their cognitive, emotional, and social development. These students are unable to correct their problems by themselves. It, therefore, becomes the responsibility of parents, teachers, doctors, and others to help identify, assess, and label the students so that proper modifications and interventions can be developed that will improve the students' situations.

The ultimate goal is to provide each ADHD student with interventions and modifications that are tailored to his or her needs. While this sounds honorable and essential, many controversial issues must be addressed. Many have become concerned with the possible interventions that are used with ADHD children. The primary issue is whether children should be medicated for their disorder. Physicians, parents, and teachers are given the duty of deciding the best interventions for the students after they have been diagnosed with ADHD. Many studies have been done to address the advantages and disadvantages of each different intervention method. The results of these studies are not clear-cut nor do they provide one answer for correcting the symptoms of ADHD in every child.

The following information and research will attempt to address the controversy regarding the medication and what the teacher could and should do within the classroom to help ADHD students excel and experience personal success. This includes that the teacher have an understanding of ADHD, its characteristics, and the diagnostic process

so that interventions are developed on the basis of this understanding for each individual student.

Literature Review

Attention Deficit Hyperactivity Disorder is defined in the Diagnostic Statistical Manual-IV (DSM-IV) as having a two-dimensional structure. This contrasts earlier definitions, which classified ADHD as having three components; problems with attention, impulsiveness, and hyperactivity. Other definitions have combined the three characteristics above to form a one-dimensional structure, because of the correlation present. However, the DSM-IV has limited the three components into two dimensions. The first dimension deals with problems of inattention and the second as a combined factor of inattention and hyperactivity (Pillow et al, 1998). Although the same three characteristics were involved in each of the definitions, there is still uncertainty present regarding how the dimensions correlate. In a study performed by Pillow et al. (1998), a comparison was done to test the different definitions or models for ADHD. The research supported the DSM-IV model and recognized the need to view both dimensions in diagnosis. Along with a variety of definitions are a variety of the subtypes found within the ADHD framework. As seen in the scenario above, students with ADHD can be extremely different in their symptoms and behaviors. These differences are seen in the students' dimensions and modes of expression. An ADHD child can have internalizing or externalizing characteristics (Erk, 2000). Brown (2000) divided ADHD into three separate subtypes. The first subtype is ADHD-I and is characterized primarily by the inattention factor and lack of hyperactivity. The second subtype is ADHD-C,

which is viewed as a combined disorder of having both inattention and hyperactivity. The third subtype ADHD-HI is expressed primarily by hyperactivity-impulsiveness. Brown (2000) eliminated ADHD-HI as a common subtype due to its presence seen only in preschoolers. However, this subtype can be used as a warning, because preschoolers with ADHD-HI later developed ADHD-C. Similarly, Erk (2000) defined two subtypes of ADHD. His first subtype ADHD-PI can be related to the ADHD-I used by Brown (2000) and the second ADHD-PHI as ADHD-C. He described ADHD-PI as being an internalizing disorder. Students with ADHD-PI have more problems relating with attention, cognition, and anxiety. These are the students who are typically shy, withdrawn, and unpopular. They also tend to perform poorly academically and recreationally. Likewise, ADHD-PI is manifested externally. The problems of these students are found in the areas of attention, behavior, and impulsiveness. Obviously, there are clear lines drawn between the disorders because of their characteristics. It could be very difficult to see that students of different subtypes are diagnosed within the same disorder. While there are many controversial aspects of defining ADHD, teachers must be aware of the definitions and subtypes of ADHD. They need to be knowledgeable about this disorder, because they will indeed experience children within their classrooms who will have a variety of ADHD subtypes.

Teachers may at times be faced with the task of recommending a student to be evaluated as possibly having ADHD. This adds to the need for teachers to be knowledgeable of the disorder. Although many children may seem at times to be possessors of this disorder, they can be sorted out after focusing on the diagnosing

characteristics of ADHD. ADHD will emerge during the childhood period. It is a noticeable disorder that will appear in many different situations. The child will exhibit the symptoms both at home and school. The effects of the disorder also may be detrimental to the child (Erk, 2000). ADHD will affect the students in a variety of their surrounding systems. It may influence the students behaviorally, emotionally, and socially as well as academically. With this in mind, the seriousness of the disorder for students is revealed as they are considered in a classroom context.

The characteristics of ADHD are numerous; however, there are defining characteristics that teachers should be aware of and looking for within their classrooms. Children with ADHD do not look different from other children. In fact, physically they appear as if nothing is different with them at all. As mentioned before, ADHD students will have problems with attention. They may often be observed as inattentive and easily distracted. They will sometimes appear as if they are in a daydreaming state and preoccupied. Other hallmarks include impulsiveness and hyperactivity. Children often have problems with concentration and coordination. They tend to fidget and move for no reason. They may have trouble finishing tasks and maintaining interest. Others may seem lethargic and sleepy (Erk, 2000). Reid continued this list by explaining that ADHD students may be disruptive. These behaviors may include trouble with staying in their seats, being aggressive, and displaying noncompliance. Barabasz & Barabasz (1996) suggested that girls would have more trouble with internalizing factors where boys would tend to have more symptoms that are external in nature. For instance, a girl will be more likely to withdraw socially while a boy may be aggressive or misbehave. These

characteristics are probably just a few among many that are exhibited throughout the whole population of ADHD children. The characteristics also may or may not be present in their entirety for every child. However, they tend to be the most pervasive in nature and consistent in many ADHD cases.

Parents, teachers, and other adults will need to be aware of many educational implications when they are working with the students. ADHD students will have academic difficulties due to the characteristics of the disorder. Obviously, if they have trouble with behaving, then their academic performance will be affected. Marshall and Hynd (1997) conducted a study to test the correlation between ADHD and academic underachievement. In their study, they found that there were indeed problems associated with academic performance in ADHD students. For instance, they found that ADHD-I students were at a higher risk for failure than other students, especially in the areas of math, spelling, and reading. Overall, it was determined that the characteristics observed did promote below average school performance. DuPaul and Eckert (1997) furthered this claim by stating that ADHD students are at a higher risk for academic under-achievement. ADHD students are different academically from the average performing students due to their deficits. Once it is understood what the disorder and its symptoms can cause in the life of a child, it becomes even more of a necessity to correctly diagnosis a student who is suspected of having the disorder.

The Diagnosis Process for ADHD

Understanding the numerous characteristics of ADHD will help doctors, teachers, parents, and other adults determine if in fact a child needs to be assessed for diagnosis.

Many different methods for assessment have been developed. The problem occurs in trying to determine the best assessment strategy for a particular child. A child being tested for ADHD must display a minimum of six of the nine different behaviors that have been linked as being symptoms. These behaviors must have been present for at least a span of six months, and the behaviors have to be beyond the normal prescribed level for that particular behavior (Brown, 2000). From this explanation, it is understood that a child does not suddenly develop ADHD over the course of a day or even a week. The behaviors must have been present within the prescribed time limit and must also be severe enough that it could not be considered a normal behavior for a child of a particular age. Barabasz & Barabasz (1996) furthered the inclination that ADHD is not an easily diagnosed disorder. They suggest that children being assessed will have many symptoms present. They explained that no one symptom would be sufficient enough to diagnosis and label a child. With all of this in mind, it becomes the responsibility of a counselor or physician to develop an effective technique for assessing the child. The technique used must adhere to the diagnosing requirements and provide a fair evaluation for the individual child.

The methods and testing procedures that can be used in diagnosis are many. Several research studies and developments have attempted to create a more precise and efficient way for diagnosing. For instance, Brown (2000) suggested physicians and counselors should use an assortment of different techniques and methods in an attempt to counteract the limitations involved with any one single test. This would include using different techniques, origins, and testing environments. The job of diagnosing is beyond

an easy procedure, because all factors have to be taken into consideration. A study conducted by Hale and his colleagues (1998) found that when attempting to diagnosis a child, doctors need to monitor and pay close attention to all of the data received and the responses that the children make to the different prescribed dosages of medications. This process will include continuing to see the child after the diagnosis has been made in order to observe the effectiveness of the interventions prescribed. Once again this suggests the extreme care and caution that must be taken when diagnosing children. Children are all different in their make-up and personalities. An intervention that will work for one child may prove detrimental in the case of another. Therefore, counselors should pay careful attention to the effectiveness of their methods and then continue to follow-up on the progression or digression that the child is making in response to the medication or other prescriptions prescribed. This addresses a controversy of diagnosing and treating students with ADHD.

Labeling a child as having ADHD is not an easy and effortless task. Many issues and problems can arise and be involved in a student's diagnosis. This is why it is extremely important for all who are involved with the well being of the student, including the teacher, to pay careful attention to the process. Many problems surround the issue of diagnosing and thus labeling a student with ADHD. Diller (1996) suggests that doctors and physicians today have too many pressures being placed upon them from society, including parents, teachers, counselors, and many others. Some of these pressures include both time and economic constraints. The pressures can make the decision of prescribing medication more appealing than spending large amounts of time in

developing interventions. Thus it becomes easier for everybody to place a child on medication to have a quick fix than facing the real issue of working to counteract the child's deficiencies. Vatz & Weinberg (2001) further this notion by suggesting that the parents of ADHD children are affecting the diagnosis process. When parents are witnessing and hearing success stories of other children, who showed improvement after being placed on medication, they become swayed and desire this same success story for their own children. They want to deal with the issue immediately and quickly. This is what Ritalin and other stimulant medications do. They give the quick fix that everyone desires. However, this can be extremely detrimental for students. Placing a child on a strong medication is not a decision that can be made without considering both sides of the issue. The pressure that parents may be exerting on physicians to medicate their children is far from beneficial. School standards are also placing pressures on correcting students' deficiencies. Once again, it is the desire that the ADHD students have the ability to excel as average performing students. The increased number of students who have been labeled is also influencing the rapid diagnosing of students. It seems as if it is easier to label a child now as compared to prior years, because ADHD has become such a common disorder. Last, the differing diagnostic and assessment criteria for each physician can also cause deficiencies in diagnosing and medicating children. The issue is not finding the fastest and easiest method for helping the child deal with ADHD. Even though faster and easier sounds like the best solution, the long-term effects of such a decision can be very destructive. When a child is diagnosed, all of the necessary precautions must be

addressed and implemented. Then many steps will have to be taken in selecting the proper intervention methods for each individual student.

Interventions and Modifications

After an ADHD diagnosis has been determined, the interventions in the students' Individualized Education Program (IEP) become the number-one priority. The present research suggested the using an assortment of intervention strategies together, which will attend to the totality of the student's needs. A common treatment approach used normally incorporates medical therapy, the promotion of the desired behavior, academic accommodations, and different systems of support for the children and their family members (Reid, 1999). These four different approaches will target all of the individual need areas of the child. The intervention treatment that is developed will demand an abundant amount of time and effort on the part of all those involved. There is no miracle cure that will correct the disorder overnight. It must be understood that the treatment plan for the student will require patience and understanding. The study by Hale and his associates (1998) pointed out that correct doses of stimulant medication and behavioral accommodations combined will provide a successful treatment plan for ADHD children. Many different approaches can be combined to produce a desirable treatment plan on each individual basis.

Stimulant Medication

The treatment plan that is usually addressed first is determining if the student will need to be placed on a form of stimulant medication. DuPaul & Eckert (1997) stated that the most often used and most effective treatment is stimulant drug therapy, and the most

common form of medication prescribed is methylphenidate, which is commonly known as Ritalin. Currently, about one million children are receiving stimulant medication for ADHD (Barabasz & Barabasz, 1996). The large proportion of children receiving medication attests to the positive effects of the treatment. The usefulness of medications, such as Ritalin, includes an increase in the ability to sustain attention and to control impulses. The medication is also useful in increasing success with internalizing dimensions and academic enhancement (DuPaul & Eckert, 1997). Erk (2000) also suggested that the medication would increase self-management and the potential for future success. The medications help to regulate the neurochemicals within the brain that are believed to be in connection with the cause of ADHD (Barabasz & Barabasz, 1996). However, as stated before, a miracle cure for ADHD does not exist. While many positive effects are obtained through the use of stimulant drugs, other negative side effects are also present. Some of the concerns are attributed to the safety of the child. The response made to medication is different in every child. While one child may respond positively, another may be overcome with negative side effects (Hale et al, 1998). These side effects include problems with self-esteem, appetite, growth, sleeping habits, and the potential for cancer (Barabasz & Barabasz, 1996). Another issue is that medication does not cure the problem. When children are taken off the medication, they will exhibit the same problem behaviors as before they were medicated (Reid, 1999). This suggests that medication is only a temporary solution for the present and does not have any further implications for the future advancement of the child's condition. The issue of concern is that nobody knows for sure what the long-term effects for children taking Ritalin will be, because

there have not been controlled studies addressing the future implications for Ritalin (Diller, 2001). The positive effects of Ritalin can only be viewed in light of the present. Unfortunately, with all of these concerns in mind, stimulant medications are still heavily prescribed for children, because of the positive effects reportedly being experienced by many. Still it is suggested that the treatment plan be combined with other behavior interventions to further enhance student success.

Classroom Interventions

The job of a teacher is to assist her students in every possible way to ensure their personal success. The classroom is a very busy place that is filled with students having differing needs. Behavior interventions are used within the educational context to enhance the success of a student by attending to the students' needs. While students may or may not be receiving medication, they will still need other interventions pertaining to their behavior. The job of the educator is to determine the most successful academic interventions and behavioral modifications for each ADHD student. Reid (1999) stated that one intervention would not prove to be successful for all students. There will be different needs and ability levels for different students. While one may work well with notes going home for misbehavior, another may need some form of reinforcement system. Thus, the goal of any behavioral intervention is to make provisions according to the needs of the child so as to improve targeted behaviors (DuPaul & Eckert, 1997). Behavior interventions are targeted at reducing and even eliminating the occurrence of undesirable behaviors, and attempting to replace the problematic behavior with a more desired solution so that the child will be able to participate in class with a greater success rate

(Reid, 1999). The behavior can be corrected when a cause or purpose for the behavior is determined. Every child displays a particular behavior for some reason. When the purpose has been determined, it is then that the replacement can occur. The different accommodations that can be made within the educational environment include altering the classroom to the particular level of need of the child to try to keep the undesirable behaviors from occurring. Altering the seating arrangements of ADHD students is one such intervention. The most powerful behavior accommodation that can be instituted provides reinforcements and punishers according to the behavior displayed by the student. The different interventions that can be used are limitless. The teacher has the responsibility of choosing the correct combination of interventions that will work for the students within her classroom.

The first and most obvious step is to make certain that the learning environment of the classroom is facilitating to the needs of the student. Garber et al (1996) suggested that much attention must be placed on the seating of the ADHD student. The student should be placed close to the teacher and away from distractions. He or she should not be located near doorways or areas that permit a high amount of traffic flow, such as near pencil sharpeners. However, this does not mean that a student should be isolated from the rest of the classroom members. A seating arrangement that is set up in rows versus groups is also facilitating, because social distractions can be decreased. It may also be beneficial to locate the ADHD student near a peer model or buddy so that the student can observe appropriate behaviors and receive help if necessary. The physical environment of the classroom must be flexible as to challenge but accommodate the students by

promoting a supportive and stress-free environment (Dornbush, 1993). The classroom must be flexible in observing that all students are different and not one arrangement may work. There may be the need to try new seating arrangements based on the needs of the students until an appropriate alternative is discovered. Arrangements may also need to be changed frequently as the effectiveness may begin to wear off.

Creating appropriate rules and routines also enhances the classroom environment. ADHD students are in need of rules and routines, because they often have trouble with behavior when structure is absent. The rules of a classroom must be explicitly stated, put in positive terms, repeated often, clearly visible, and be linked with the appropriate routine to be followed (Dornbush, 1993). ADHD students must know what is required of them and how they are to behave at all times. The rules should facilitate this by providing the necessary routines or procedures of the classroom. This entitles the students to be accountable for both their good and bad behaviors, because the teacher's expectations are clearly stated and understood (Wender, 1987). This does not imply that the students will behave accordingly at all times. The students will still have their individual difficulties that the teacher needs to be constantly aware of and continue to address with other interventions beyond simply stating the rules.

Along with communicating the rules and routines of the classroom, teachers must have specific expectations for all of the students. Teachers must not be permissive in their teaching styles. They need to be organized, structured, and understand the needs of their students (Garber et al, 1996). This requires teachers to be informed of and active with their students and their needs. Dornbush (1993) suggested that teachers act as

models for their students when communicating their expectations. This implies that teachers need to put themselves in the students' places and demonstrate the requirements that they expect of their students. Obviously, teachers will not be successful in having their students behave appropriately if they cannot live up to their own expectations. Teachers must also be flexible, understanding, and work to avoid embarrassing the student. This includes grading students not on their disabilities, but rather on the material (Dornbush, 1993). All of these suggestions center on teachers' abilities to understand the needs of their students.

Once the environment of the classroom is established, steps can be taken in dealing with behavior modification. The first step, however, is understanding the student's problem by asking who, what, when, where, how, and why questions. The answers to these questions will help teachers to discover the needs, causes, and reactions of the inappropriate behavior (Dornbush, 1993). Teachers cannot plan interventions and modifications if they do not first understand the problem that they are trying to correct. Numerous methods are available for working with behavior modification, but once again the methods to be used must attend to the particular needs and symptoms of the individual students. As stated above, the classroom rules and routines must be stated and understood by all of the students before the alternatives can be used to influence the students' compliance. The job of the teacher is to guide and direct the behavior of the students through reinforcement and consequence. Of course, the teacher must be consistent and fair, consistent in the sense that they take care of the problems every time that they occur and provide similar consequences or reinforcement each time the issue is

addressed (Winebrenner, 1996). They must be fair in that they provide outcomes that are appropriate for the behavior.

When working with behavior, teachers need to help the students gain control of their actions and be responsible for their own successes or failures. Teachers should not accept excuses for not being able to complete a task when it is within the students' capabilities. Dornbush (1993) suggests several tips for helping students gain responsibility for their success. Students will gain control when they are encouraged and rewarded for their successes. Teachers must also realize that certain tasks need to be developed that will help the student feel successful. These suggestions are valuable in that they help the student to gain the confidence that they are lacking so that they can believe in themselves and have the self-confidence to succeed. The teacher is valuable in this process by providing the opportunities for success, encouragement, and immeasurable amounts of praise.

Modifications may be made for the individual beyond those instituted for the classroom. Dornbush (1993) provides suggestions for necessary modifications for individual ADHD students. First of all, the students need to know and understand the limits that are placed upon them. This will include limits on their physical movement; however, at times students will need to move around physically. Teachers should provide breaks for physical movement daily. There should not be a problem with allowing the student to stand if necessary while doing seatwork as long as they are not interrupting the other students. If interruptions do occur then it may be necessary to set up a location separate from the other students where the student will not disrupt others with his or her

movement. Allowing the student to be a special helper and run errands for the teacher when needed can also accommodate for movement.

Along with assisting the student by providing modifications, the teacher must also help the student to discern between correct and incorrect behaviors. Winebrenner (1996) emphasized that the teacher must be aware of the students' behaviors and then make the students aware of their correct and incorrect behaviors. Helping them to learn correct behaviors can be taught directly through modeling expectations. Other suggestions include teaching necessary social skills and instituting behavior contracts. Behavior contracts are made between the teacher and the student in an attempt to decrease inappropriate behaviors. In order for students to have success in fulfilling teacher expectations for correct behaviors, they need assistance in recognizing their shortcomings. If they do not recognize their own incorrect and correct behaviors, then they will not be able to discern between them when faced with making a decision concerning their actions.

Other suggestions for behavior modifications involve interventions. Interventions are specialized in the sense that they are developed with the individual student in mind. The interventions used as mentioned before are perfect and may require revisions depending on the reactions and successes of the students when they are implemented. Reid (1999) explains that the success of intervention programs increases when teachers are able to correlate the intervention to the targeted behavior. Each of the following interventions are extremely beneficial for classroom use. Some may even be employed

for use in the home to reinforce the success of the intervention by applying it to all of the student's environments.

A system of reinforcement seems to be one of the most beneficial intervention methods. ADHD students are in need of rewards for their appropriate behavior. Forms of reinforcement may either be intrinsic or extrinsic. Intrinsic reinforcement takes the shape of intangible rewards such as praise or a simple smile while extrinsic reinforcement involves tangible rewards. Reid (1999) explained that when reinforcements are first used, the students must receive the reinforcements for whenever the appropriate behavior is displayed. When the behavior begins to be displayed more often, the occurrence of the reinforcements can decrease. Reid (1999) also suggested that positive reinforcement should be used in the beginning without the use of consequences. When it becomes apparent that the use of the positive reinforcements alone is not sufficient, then the use of consequences should be implemented as well. The behaviors must also be addressed immediately and in the context that they occurred so that the association between reinforcement or punishment and behavior can be made. The use of reinforcement or consequence must also be specific and genuine (How to manage, 1997). The students need to know exactly what they are being praised or reprimanded for in a tone that is both serious and sincere. The warning in using this system is that satiation may occur. This happens when the power of the reinforcement declines over time. Before satiation occurs, the teacher must make necessary modifications in the reinforcements (Reid, 1999). When using reinforcement, the teacher can use an "praise and ignore" system. In this system, the students will be praised when they perform the appropriate behaviors and

ignored when they perform inappropriately (Garber et al, 1996). Since students may be reinforced by the negative attention that they receive through consequence, it may be more beneficial to ignore their minor outbreaks.

One method incorporating reinforcement is a token economy in which the students receive some form of token to be spent at a later time for performing the defined appropriate behaviors. These tokens should also be taken away for incorrect behaviors (Garber et al, 1996). The behaviors that qualify for receiving a token must be clearly stated so that the students are certain of what is expected of them in order to receive the tokens. The teacher can also demonstrate the appropriate behaviors through modeling. By doing this, the ADHD students actually witness how to perform the teacher's expectations. It was also suggested that teachers provide cues or reminders for the students when they may wander off task. The use of response cost can and should be combined with the token system. In using the response cost system, students can lose their tokens for inappropriate behaviors. By taking away the tokens or fining the students, the teacher reduces the inappropriate behavior while increasing the appropriate (Reid, 1999). When using both systems together, the outcomes can be particularly effective, because the students are given opportunities for success through the reinforcements but also have the potential for reprimand.

Time-out may be used as a form of consequence or punishment in that it removes the students from positive reinforcement. In order for time-out to be successful, the behaviors must be defined, there must be a predetermined location, and a brief time limit must be established before the procedure is used. Time-out must also be strictly

enforced. When students do not comply, there should be an alternative for additional consequence (Garber et al, 1996). Reid (1999) added that this form of punishment should only be used with extremely inappropriate behaviors and as a last result after it has been determined that the use of positive reinforcement is ineffective. The effectiveness of time-out rests upon two criteria as defined by Reid. First, the time that the students are included must serve as a form of reinforcement. Likewise, when the students are removed, some form of reinforcement must be withheld. The second criterion is to keep time-out from being used as a form of escape. Some students actually are looking for a way to be excluded and avoid completing tasks. In this sense, time-out is actually serving as a reinforcement for the misbehaving student. Teachers must be certain at all times that this is not occurring. Time-out will only be effective when it is used correctly as a consequence. Another warning is that if the teacher uses time-out too often, then it can lose its effectiveness (Garber et al, 1996). As discussed previously, teachers do not want their students to become adjusted to their consequences. They must decrease the frequency or use other modifications as to avoid decreased effectiveness of any interventions.

The involvement of the parents is essential when working with ADHD students. There needs to be a collaborative effort between the school and the home in order for the interventions to reach their fullest potential. One method that can be used to keep parents involved with the school is communication. Communication can be accomplished through the use of notes. The notes can report any information from the day that pertains to the students. The notes can be used to report inappropriate behaviors as well as missed

assignments. Reid (1999) suggested that a contract be established between the teacher and the student that establishes the behaviors that the student will be targeting for improvement. The student and the teacher can both collaborate in the monitoring of this behavior throughout the day. At the end of the day, the teacher is to complete a note to be sent home that reports the student's good and bad behavior for the day. The parents are then to implement their own interventions at home to influence the reinforcement or consequence of the student's behavior. Teachers will have to continue communication beyond the use of notes to monitor the use of the interventions within the home. The student's parents will often need help in establishing the interventions at home and then implementing them. The teacher can assist parents by explaining how to implement the particular intervention effectively. Parents who are involved in their children's education are wonderful assets for teachers. Students need to receive the same reinforcement and consequence at home that they would in school. In order for the interventions to work, the students must experience the same limitations and modifications in all of their environments.

A final intervention strategy centers on involving the students in modifying their own behavior. ADHD students need to be taught strategies for helping themselves cope with their deficits. The use of self-regulation can help the students learn how to govern their own behavior and time on-task (Reid, 1999). Reid (1999) explained that ADHD students lack the ability to display appropriate behaviors over extended periods of time. He suggested the use of self-monitoring and self-management strategies to aid the students in regulating their behavior. Self-monitoring occurs when the students are

actually determining whether they are performing an appropriate or inappropriate behavior. The students and the teacher would have previously determined the targeted behaviors for students' assessments before beginning the use of the strategy. The students then make records of their behavior to assess when and how long they were performing the desired behaviors. The goal of self-monitoring is to increase the students' time performing appropriate behaviors. When the strategy is first implemented the intervals for assessing their behavior will occur often, but as their behavior improves the length of time between the intervals can increase. Self-management is another strategy used with the self-regulation intervention. This strategy uses both teacher and students assessments. The students first conduct self-assessments of their behavior and then teachers evaluate and add to the student assessments. In self-management, the students are actually using a rating scale to judge the level of their behavior. The behavior would be rated on a zero- to five-scale with zero being unacceptable and five being excellent (Reid, 1999). Time intervals would also be used with this strategy. Both of these strategies are aimed at aiding the students to become responsible for their own behavior. By using these strategies, it is desired that the students will increase their appropriate behaviors over longer periods of time.

Conclusion

The debate over the proper intervention plans for students is extremely exhaustive. As mentioned previously, the most controversial debate involves medicating students. As with all of the interventions, before medicating a student, many issues must be addressed. The decision to medicate a student should be made on an individual basis

and attend to that student's particular needs. Whether or not a student is medicated, the teacher must make an effort to develop classroom interventions to enhance the student's attainment of success. All of the classroom interventions mentioned are beneficial for virtually any classroom. Each of the strategies can be combined and modified to meet the needs of the students. Perhaps this flexibility is the advantage of the strategies. They are all open to teacher discretion and creativity. Whenever any of the strategies are used, it is important for the teacher to see the student as an individual. ADHD students should not be viewed as a collective whole; rather, each of these students need to have particular interventions tailored to their individual needs. Children with ADHD face many problems and issues within their lives that may be completely outside of their control. The jobs of those around them are to determine what can be done to further the development of the students with regard to emotional, social, and academic advancement. Seven-year-olds are lacking in the ability to design a program that will benefit them and allow them to be successful. The interventions mentioned above are just a few that may be instituted in providing children with the necessary means for success. The proper balance of interventions will be individually determined. The process of assessment and further observations will aid in determining what must be done to ensure that the children will obtain success. The issues surrounding which form of intervention surpasses the other concerning medication or behavioral modifications and interventions becomes important when looking at each student's needs. The ultimate goal in all of the measures and interventions used is to find a proper balance in the children's lives so that they will

be able to obtain success just as any other child without ADHD concerning present and future achievement.

Method

Participants

Teachers

The participants included three teachers in a private Christian school in central Virginia, who voluntarily completed the distributed survey. Two of the teachers taught the third grade while the other was a fourth grade teacher. All of the participating teachers were female.

Students

Classroom One. The total number of students within the third grade classroom included seventeen students; eight were female and the remaining nine were male. Two teachers were involved in the first day's observations; one was the regular classroom teacher and the other a computer teacher. The female student, Student 1, whose interactions were being observed, was diagnosed with ADHD. She was receiving methylphenidate for her condition.

Classroom Two. The total number of students within the fourth grade classroom included fifteen students; eight were female and the remaining seven were male. Two teachers were involved in the second day's observations, one being the regular classroom teacher and the other the physical education teacher. Two of the children's interactions were observed. One student, Student 2, was diagnosed with ADHD having no hyperactivity and was receiving Alderal for his condition. The other student, Student 3, was diagnosed with ADHD and was not receiving medication.

Instruments

The instruments involved in the study included a survey; see appendix A, and two days of observations. The researcher for this specific research project created and administered the survey. The two days of observation consisted of observing the various interactions of the diagnosed students and the behavior modifications that were used within the classroom to prevent disruptive behavior and promote on-task behavior.

Procedure

The project was first established through contact with the private Christian school in order to gain permission for the survey and subsequent observations.

Survey

A six-question survey was developed and faxed to the elementary school principal for review. After receiving approval for distribution, the survey was delivered to those teachers having had experience in working with ADHD students. The survey was completed on a voluntary basis and then faxed back to the researcher, after being completed.

Observations

Day One. The first day of observation was completed in a third grade classroom. The child who had been diagnosed was first determined so that subsequent observations could focus on her particular interactions with the teacher, her peers, the environment, and her self. The behavior modifications employed by the teacher were also observed and documented. The observation occurred throughout the schedule of regular daily activities as developed by the teacher.

Day Two. The observations for day two were conducted within a fourth grade classroom. The classroom contained two diagnosed students, who were observed based on their interactions with the teacher, their peers, the environment, and themselves. Once again the behavior modifications employed by the teacher were carefully observed. The observations were conducted throughout the regular daily schedule as developed by the teacher. The observations followed the students' interactions throughout this daily schedule.

Data Analyses

The data from the survey and the observations were compared and checked for consistencies. There was also a comparison between the teachers' beliefs and practices as reported in the survey and the results found in past research. The observations of the intervention strategies were then examined to test for the effectiveness of the different strategies employed by the two teachers observed. The observations were compared to note the differences and similarities between the strategies and methods used by the teachers.

Results

Survey

Three teachers voluntarily completed and returned the survey. There were a total of four children diagnosed with ADHD from the surveys completed. See appendix B.

Teacher One. The first teacher reported having one student diagnosed with ADHD. Student 1 was receiving Ritalin for her condition. The teacher reported on the survey that medication was necessary in all cases of ADHD, because it was needed for the student to

concentrate and to remain still. The strategies that she used for behavior modification included developing a “rigid” classroom setting, creating and following a daily schedule, informing students of changes to daily routines, and setting time limits for assignments to encourage time on task. She also believed that it was necessary for a blending of behavior modifications or instructional strategies and medication in planning an intervention plan for the student. Her reasoning was that the medication was needed for physical reasons while the instructional and behavioral strategies were needed for emotional and mental reasons.

Teacher Two. The second teacher reported having two students diagnosed with ADHD. One student, Student 2, was receiving Alderal for his condition while the other, Student 3, was not receiving any medication. She expressed a different approach from the other teachers and stated that medication was not needed in all cases, but did not provide any reasoning for her answer. She reported using several behavior and instructional strategies in the classroom. She included seating the students near the front of the room or the teacher, providing reminders for being on task, and checking work frequently. She also perceived that a blending of the medical and behavioral interventions seemed to work the best in developing an intervention plan.

Teacher Three. The third teacher completing the survey reported having one student within the classroom as diagnosed with ADHD. The student was receiving Ritalin for stimulant medication. She perceived medication as necessary in all cases to aid the student in staying on task, completing assignments, and being organized. She reported seating the ADHD student on the front row, decreasing distractions, and providing

frequent praise and encouragement as behavior modification strategies that she employed. She also believed that there was a need for a blending of medication and behavior or instructional strategies in developing intervention plans.

Observations

Day one. The observations for day one were conducted in the classroom of the Teacher 1. The set-up of the classroom featured easy accessibility to the teacher and Student 1 seated at the front of the classroom. The desks were also arranged in rows and not clusters, which allowed the board to be easily viewed from all locations. The interaction between the teacher and the student included frequent reminders for behavior, the use of praise and nonverbal cues, circulating around the room, providing additional assistance, and probing. The student interacted with her surrounding peers through whispering. She was also easily distracted by the activities of the students surrounding her. She interacted with her environment through frequent distractions. She also played in her chair and frequently stood at her seat. She interacted with herself through fidgeting with her pen, hair, glasses, and bracelet. She would also talk to herself and was rash in making her decisions. The behavior modifications used by the teacher included activities allowing movement, recognition for good behavior, encouragement of participation, the use of a strict daily schedule, and constant reminders. The teacher also used a tally system for rewards and punishments. Those students who misbehaved were told to place a tally beside their name. After the accumulation of so many tallies a punishment was given. Those students who behaved received a slip of paper to write their name on that would be used in a future drawing for a prize.

The students also attended computer class. During computer class, Student 1 was completely involved and on task. She was not distracted by the others surrounding her and completed all of her work efficiently. She also followed all instructions without the need of assistance.

Day Two. The observations on day two were conducted in the classroom of the Teacher 2. Two students were diagnosed as having ADHD within this classroom. Student 2 was receiving Alderal and Student 3 was not receiving any medication. The classroom was set-up so that the ADHD students were seated close to the teacher. The rules of the classroom and the schedule were clearly visible so that all students could see them.

Student 2. The interaction with his teacher included participation in group discussions. The teacher also provided additional assistance when needed and occasionally provided reminders for behavior and staying on task. He was easily distracted by his peers and did not interact much until after the lunch break. He then became more talkative. He also worked more independently during group work and only communicated with his partner to share his answers. He was observed as day dreaming and staring off into the classroom during independent work. He was frequently fidgeting with his materials and constantly in movement. He was either tapping his pencil, shaking his legs, or rubbing his hands through his hair. Behavior modifications included medication to keep him from being lethargic. He was also allowed movement when needed, provided with a schedule to follow, and had a book to read when he finished his work early. He participated in the class's reward and punishment system. When the students misbehaved, they were told to place a star beside their name. After receiving a

certain number of stars, a punishment was given. They were also given stickers for good behavior. After receiving so many stickers, the students were allowed to choose a prize.

Student 3. His interaction with the teacher involved frequent reminders. He did not participate unless called upon by the teacher. He was constantly out of his seat receiving assistance from the teacher. He interacted with his peers frequently. He was observed talking back and forth among friends. Others also easily distracted him. He interacted with his environment through frequent distractions and constantly getting out of his seat. He also frequently doodled and drew instead of paying attention. He interacted with himself through fidgeting. The same behavior modifications were used for this student as Student 2.

During physical education, the children played soccer. The Student 2 participated, but did not go beyond the activity level of the other students. Student 3, who was not receiving medication, was very loud and excited during the game. When the environment became less structured, he began to pick on his friends and tease. He was also observed running all over the field during the game.

Discussion

Survey

The survey was consistent with the practices of the teachers observed. Their beliefs were also consistent with past research that encourages the idea of a blended approach concerning medication and behavioral interventions (Barabasz, 1996). Teacher 1 followed the behavioral modifications and instructional strategies that she suggested by using a schedule and setting time limits for completing work. Unfinished work was to be

completed during lunch and when other work was finished early. Teacher 2 did not place the students in the front of the classroom, but did place the students near her desk. She also provided plenty of reminders as she suggested in her survey. Both teachers completely utilized the interventions that they suggested in the survey.

Effectiveness of the Interventions

Teacher 1 used extremely successful interventions. The children completely finished their work within the designated time limits. She also provided a schedule that the students were well aware of and capable of following. This virtually eliminated down time and kept the students on task. She also used questioning strategies and games to keep the students involved, which this was effective in keeping the ADHD student from being easily distracted and off task. The day was completed without any serious behavior problems. The tally system employed was extremely successful. Only one tally was given throughout the entire day. Many slips of paper were passed out for the drawing as well for good behavior. This was successful in helping the ADHD student produce the desired behaviors.

Teacher 2 effectively kept all of the students on task through the use of reminders. The students also completed all of their work successfully with a minimal amount of needed assistance. The students were not as actively involved as with the Classroom One observed. Teacher 1 used more games and questioning techniques to keep the students involved on day one of the observations. This apparently helped to keep the students on task more and help eliminate down time more efficiently than in the second classroom. In Classroom Two, a schedule was followed as well to help keep students aware of when

and what they were supposed to be doing. Only one student received a tally mark for misbehavior and many stickers and prizes were awarded for good behavior.

Consistency with Past Research

The interventions used by the teachers were a combination of methods that helped develop an intervention plan. The teachers also made accommodations that were consistent with past recommendations from research. Research suggests that accommodations be made in the areas of the environment of the classroom, tasks and materials, and curriculum and instruction (Reid, 1999). The classroom modifications of the teachers included creating effective seating arrangements. Reid (1999) suggested that seating arrangements be made so that the desks are situated in rows instead of clusters. The teachers went above this recommendation by placing the desks in rows and also seating the students near the teacher and/or in the front of the classroom. Reid (1999) also suggested that teachers provide feedback to the students and observe their activities frequently. This was done through reinforcement, reprimands, and cues, which were used by both teachers being observed. Teacher 1 provided abundant amounts of opportunities for interaction in order to keep the students actively involved. This is yet another suggestion provided by Reid (1999). Other suggestions by Reid (1999) include the use of a schedule that is consistent with the students' performance capabilities. The token economies used by both teachers were extremely effective in encouraging appropriate behavior. The system suggested by Reid (1999) is similar to the methods used in both classrooms. The teachers effectively employed these strategies to promote successful classrooms.

Conclusion

The surveys completed by the teachers displayed their understanding of the needs of their students with ADHD. All of the teachers surveyed perceived the need for medication, but they also noted the effectiveness of interventions for ADHD students despite whether medication was used or not used. Students 1 and 2 also displayed their success in being on the medication while Student 3 displayed his lack of a need for medication. These findings only reinforce the idea that the decision to medicate students should be made on individual levels. Teachers 1 and 2 were very consistent in applying the measures that they suggested for use. As stated above, the teachers did a wonderful job of implementing the various strategies needed for the students to perform successfully academically. The strategies used by private school teachers seemed to be consistent with those used by public school teachers as much of the research suggested. Thus the research findings can be applied to all students regardless of the type of classroom in which they are located. However, with any research project there are always limitations that will be encountered. The small number of students within the classrooms, as compared to that of public schools, may have affected the successful and smooth flowing of the school day. In a public classroom the total number of students with disabilities may be substantially increased, which will decrease the amount of time the teacher may have with each individual student. However the methods employed by the private school are similar if not the same in comparison to those used in the public sector as explained in the literature review. Whatever the case may be, the intervention methods employed by Teachers 1 and 2 were effective in their purpose and can serve as a model in developing

interventions for other students. The overall goal for any intervention plan, whether medication is used or not, is to enhance the success of the disabled student, which the two observed teachers successfully completed.

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Appendix A

Survey Questions Completed By Teachers 1, 2, and 3

1. Currently, how many students are diagnosed as having Attention Deficit Hyperactivity Disorder within your classroom?
2. Of these students, how many are receiving medication for their condition?
3. What medications are the students receiving for their condition?
4. Do you perceive that these medications are necessary in all cases? Please explain.
5. Do you use any behavior modifications or instructional strategies with these students or have you used strategies with students in the past? If yes, please explain the most effective.
6. From your experience, which treatment do you believe to be the most effective with ADHD students: stimulant medication alone, behavior modifications or instructional strategies alone, or a blending of the two? Please explain.

Appendix B

Chart of Answers to the Survey

Question Number	Teacher 1	Teacher 2	Teacher 3
1.	1 -Student 1	2 -Student 2 -Student 3	1
2.	1	1	1
3.	Ritalin	Alderal	Ritalin
4.	Yes. Why? Without medication the student is not able to concentrate or sit still.	No.	Yes. Why? Without medication the student cannot stay on task and is disorganized.
5.	Yes. Strategies: -Rigid classroom setting -Strict schedule -Time limits	Yes. Strategies: -Seating close to the teacher and away from distractions -Reminders -Check work frequently	Yes. Strategies: -Sit on first row -Reduce distractions -Praise and provide verbal encouragement
6.	Blending of the two. Why? Medication helps the student physically while instructional strategies help the student mentally and emotionally.	Blending of the two. Why? Some students are not able to function without the use of medication.	Blending of the two. Why? The cases are different for every student. Medications should be carefully monitored, and the teacher should use instructional strategies to assist the students.