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The Impact of ADHD on Student Learning in the K through 12 Classrooms

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The Impact of ADHD on Student Learning in the K through 12 Classrooms

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The Impact of ADHD on Student Learning in the K through 12 Classrooms

Abstract

This research explores what students diagnosed with Attention Deficit/ Hyperactivity Disorder (ADHD) identify as important helping them learn in grades K-12 and beyond. Without the provision of appropriate supports and strategies, students diagnosed with ADHD are at a greater risk of dropping out of high school. The official definition of ADHD has been a moving target and this, in turn, has led to confusion about what ADHD ‘is’ and the educational supports that appropriately help students diagnosed with ADHD learn (American Psychiatric Association, 1980; American Psychiatric Association, 1994; American Psychiatric Association, 2013).

Moreover, efforts to understand what supports help students with ADHD tend to ignore one key population: the students themselves. The purpose of this qualitative research is to develop a deeper understanding of what supports students with ADHD deem(ed) helpful to learning by drawing on the information that the students, themselves, provide (Creswell, 2012, p. 206). In-depth interviews were conducted with three students formally diagnosed as ‘having’ ADHD.

Data was then analyzed so that overall supports and strategies across cases could be identified.

The theme of this data analysis was that medication may help students in college but not as much in the K through 12 classrooms. Testing accommodations was another theme throughout all of these interviews. All participants talked about how teachers need to work with students individually, and that they did not provide them with adequate “accommodations.” Future implications suggest professional development on interventions and medications, supporting a student based on individual needs, and more research conducted about strategies and supports that would be beneficial for students with ADHD.

The Definition of ADHD: A Moving Target

Attention Deficit/ Hyperactivity Disorder, commonly known as ADHD, is a learning disability under other health impairments (NYSED, 2011), that has become an increasingly popular diagnosis for school-age children over the past three decades. According to the American Psychiatric Association, the definition of ADHD has changed over time. The disorder officially appeared in the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-III) in 1980. To be diagnosed with ADHD, one would need to exhibit “signs of developmentally inappropriate inattention and impulsivity” (p. 41). Over time however, the diagnosis has become increasingly complex and specific. In the most recent definition of the disorder, the *DSM-V* defines ADHD as “a persistent pattern of inattention and/or hyperactivity-impulsivity that interferes with functioning or development, has symptoms presenting in two or more settings (e.g. at home, school, or work; with friends or relatives; in other activities), and negatively impacts directly on social, academic or occupational functioning.” And has updated the diagnosis of ADHD, providing examples of how to diagnose it in children, adolescents, and adults (American Psychiatric Association, 2013).

We have the official definition now, right? So, why might this be problematic?

Problem

The number of school-aged children diagnosed with ADHD has steadily increased. According to Center for Disease Control (2014), the number of student-aged children (ages 4-17) diagnosed with ADHD has increased by 42% between 2003 and 2011, and has annually increased by 5% each year. Richman, Rademacher, and Maitland (2014), suggest if teachers are not supporting these students, they are more likely to drop out of high school. We want to prevent this from happening. With more school-aged children being diagnosed with ADHD,

more students need support in the K through 12 classrooms. While there is literature that offers suggestions about what to do for students with ADHD, what we do not know is what the students, themselves, find helpful (Zambo, Zambo, & Sidlik, 2013; Martin, 2013; Miranda, Presentación, & Soriano, 2002)

Significance of the Problem

It has been difficult for teachers to keep up with the ever changing definitions of ADHD—as evidenced by the continually developing definitions in the DSM III, DSM IV, and DSM V. As a result, students may not be provided with the necessary supports and strategies to help them succeed. Given that the CDC (2014), indicates that the number of school-aged children diagnosed with ADHD is on the rise, it is important for teachers to know what supports and strategies actually help these students to learn. Given that current research tends to overlook the student or learner perspective, this study explores what supports students with ADHD perceived as helpful to their learning, K-12 and beyond.

To understand what supports and strategies were deemed helpful, I conducted three, in-depth, open-ended interviews with three college-age students all who were diagnosed with ADHD. In this interview, I asked them to reflect on the supports and strategies that helped (or hindered) their success as academic learners.

These interviews allowed me to better understand what I can do to better support current and future students diagnosed with ADHD in my classroom. This study is important because I have watched so many of my peers struggle to learn with their ADHD diagnosis. I want to be able to help students in my classroom with this diagnosis, and to provide the best learning strategies and supports I can. This research was pursued with these concerns in mind.

Purpose of the Study/ Research Questions

The purpose of this study is to explore what strategies and supports have proved helpful to student learners who have already negotiated the K through 12 classrooms, and to discover through their responses which techniques will help students in the classroom currently. Teachers will benefit from this study because although research suggests that some strategies work, there are still many students with ADHD dropping out of school. They will also gain knowledge on how students learn best in the classroom. Students will benefit from this study because they will be able to apply the strategies and supports researched to their own academic work which can lead to their educational success.

To provide teachers like myself and students with strategies and supports to help children with ADHD in the classrooms, this study is framed around the following question:

1. What supports and strategies do students, formally diagnosed with ADHD, report as helpful to and/or impeding their success as learners in grades K-12 and beyond?

According to Fabiano, Pelham, Majumdar, Evans, Manos, and Caserta (2013), ADHD has increased, but research rarely describes the impact it has on student learning in the classroom: “Studies that are exclusively focused on cases that meet rigorous psychiatric diagnostic criteria provide important information on the prevalence rate of ADHD, but they may underestimate the impact of ADHD and ADHD related-behaviors” (p. 89). The diagnosis of ADHD has a significant impact on a child with the diagnosis, but there is little data on the impact it has on other students in the classroom; their behaviors are rarely described or recognized throughout research. In this paper, I explore how teachers can help the increasing number of students diagnosed with ADHD learn in the classroom through student voice and experience.

Rationale

There are many reasons why educators may be interested in this study. Throughout their careers, it is likely that they will have at least one student in their classroom with ADHD. As educators, we need to provide students diagnosed with ADHD the best strategies and supports to help them succeed and overcome their deficits.

As an educator with an inclusive education certificate, it is my job to provide students with the best techniques available to ensure success and learning in the classroom. As an educator receiving my master's in literacy, birth through 12th grade, I need to make sure I use my students' strengths against their limitations by providing them with the strategies they need to succeed. My job is to make sure each student leaves my classroom feeling as though they can grow and keep striving for success. In order to do so, I need to make sure I am addressing those limitations that may limit their success.

Study Approach

According to Clark and Creswell (2013), a research study needs to examine of what has not been studied before: "A research study is needed to fill a gap in the existing literature about the research problem" (p. 83). Through a qualitative research design, I will be using a grounded theory method. In using this approach, data will be analyzed in order to find common themes throughout research collected. Clark and Creswell define grounded theory as, "data gathered from multiple people who have different experiences with the central phenomenon to provide the most complete data about the process, action, or interaction" (p. 298). In this case, I explored the effects that ADHD had on three participants interviewed, and the strategies that were provided to those participants that may benefit students today in the classroom.

Methodology and Design

This study was designed to explore the impact ADHD has on student learning, and to interpret which studies can help students succeed in the classroom. In the next section, I discuss the participants, setting, methods of data collection, and procedures that were utilized throughout this study.

Positionality of the Researcher

I have substituted for about a year now and have taken graduate courses full time while teaching. I will be graduating from The College at Brockport with my master's in literacy birth through twelfth grade I currently hold a certification in Childhood Inclusive Education first through sixth grade. I just recently extended my certification to include special education. I am studying ADHD because as a literacy educator, I want to be able to help *all* students in the K through 12 classrooms become more literate and successful in school and in life.

Setting/ Participant Selection

I conducted the interviews in the homes of three participants in upstate New York. All of these participants were above the age of 18 and were males who had been diagnosed with ADHD (ADD). Two of the participants attended the same elementary and high schools and lived in the same first-ring suburban district. The third participant lived in a different first-ring suburban district and attended a different elementary and high school than the previous two participants. All three attended the same college; two participants graduated last year before this study was completed. Participants were purposely selected through work relationships and friend recommendations. Each participant signed a letter of consent and gave permission to participate in this research study. To guarantee the confidentiality for all participants involved in this study, I will refer to each participant using a pseudonym.

Tom, Dave, and Matt

Three male participants, Tom, Dave, and Matt agreed to be interviewed about their diagnosis of ADHD. Both Tom and Dave were diagnosed with a sub-type of ADHD in high school right before college and graduated May 2014. In these interviews, I asked them to provide information about the strategies and supports they used in school, if any, when they were diagnosed. Tom and Dave used medication throughout high school and college. Matt, who is currently in college, was interviewed because he was diagnosed with ADHD in elementary school.

All three participants attend(ed) The College at Brockport. Dave is my friend who has been impacted by ADHD since I met him in the beginning of high school. In high school his grades were barely accelerating, and he would fall asleep all class. He also struggled in college. Tom is a colleague and work friend. I met him while working as a front end coordinator at Wegmans, and he also struggled with schoolwork while trying to graduate last semester. Matt is one of my friend's brothers. He gave his perspective based on his diagnosis in elementary school and why he protested the diagnosis and medication.

I interviewed two participants who had been diagnosed with ADHD in high school right before they went to college because both Tom and Dave felt that they could have been diagnosed sooner. Both Tom and Dave had been in college for six years total, and Dave had changed his major once. They both graduated with Business Administration degrees. Matt was a college student diagnosed in elementary school. I was also told that he cried every day in elementary school because he was embarrassed of his diagnosis. The teachers had told his parents that he should take his medication, and his parents were under stress for resisting. Through research, I found many common themes between all three participants.

Procedure

This study was conducted over a three week period which started in September 2015 and ended in October 2015. I interviewed each participant for about twenty minutes. Throughout each interview, I took notes based on the participants' answers to the questions provided. My focus was to take notes and find the common themes among each of their answers.

Throughout these three weeks, I interviewed each participant once, using the same interview questions for each (Appendix A). This allowed me to understand how each participant viewed themselves as learners with the diagnosis of ADHD. It also helped me to understand what strategies and supports helped each individual as a student, and to find a common ground of techniques that may work for students in the classroom today.

Trustworthiness

Throughout my research, I used qualitative practices to ensure that my study is valid. While conducting the interviews, I repeated each participant's answers back to them to check and review my interpretation of their answer to guarantee the validity of the interview. I also used dependability throughout my research. I noted if there were any changes to the interview format while asking the questions to each participant.

The Interviews: What Did They Share?

There was only one data collection technique used throughout my research and through analysis of my research question. I conducted three interviews and transcribed information based on the answers provided from the participants.

There were three interviews conducted during this research. The same interview questions were given to all three students (Appendix A). This interview was given to formulate a

better grasp of how these students learn, and how their strategies and supports can better help the education of future students diagnosed with ADHD.

The first question asked what type of ADHD they were diagnosed with (combined, ADD, hyperactive). The second question was how they were diagnosed, or what made them decide to become diagnosed. The third question was if educators knew they were diagnosed. The fourth question talked about the different strategies that were used in the classroom due to the diagnosis, and if there were any strategies used. The fifth question asked about what strategies have helped them in the classroom towards their learning. The sixth question was what they think teachers should do for students diagnosed with ADHD. Lastly, the seventh question asked the participants if they think the diagnosis has made a difference in their learning. The goals of these questions were to understand how students with ADHD learned, what has benefited or hindered them the most, and also to analyze evident themes teachers can use in order to help students with ADHD learn.

Matt

Matt was five years old and in elementary school when he was diagnosed with ADHD. An IEP was created for him and he started taking medication for a year. He was taken off of the medication at his parents' request. He was screened for the disorder due to his kindergarten teacher's request; therefore she was informed when he was diagnosed. Based on the IEP, Matt was supposed to receive word banks, but according to him, "that never happened" (Matt). He was also given extra time on tests, and they were read to him. When asked what strategies helped him learn in the classroom he replied, "Nothing." When I had asked him about the strategies teachers should use to help students in the classroom, he replied, "Teachers need to make sure they follow through on what they promise you. They need to be more aware of the

accommodations.” Lastly, when asked about what helped him learn in the classroom he talked about how he wanted to “prove others wrong.” Every time he became off task, he regained his focus to show others he could learn in the classroom with the diagnosis of ADHD and without medication.

Through analysis of this data, I found that Matt wanted to learn so that drive helped him through his years in school. The common trend I found in Matt’s responses were “accommodations.” He used that word frequently throughout the interview. He was not given accurate accommodations in school, so Matt believes the students that are diagnosed would work well if they were given what they need on their IEP.

Tom

Tom was the next participant interviewed. He was diagnosed with the inattention subtype of ADHD. He could recall that he started taking medication in his freshman or sophomore year of high school, but could not remember which year he was diagnosed. He started taking the medication for a year, and then stopped until he reached college. He then started taking it again. His reason for not taking medication for a year was because:

I don’t think any high schoolers should be able to take it. In high school it didn’t make my grades go up and didn’t improve my focus really, so I guess I didn’t see the point. I think it’s because I didn’t actually care about the classes. College, I cared. It definitely made a difference.

Tom self-advocated for his diagnosis. He was struggling with concepts in subjects, such as math, and decided that he would benefit from the diagnosis. Tom recalled the diagnosis as being a “two minute conversation”. This was because he was diagnosed before the laws were changed for students becoming tested for ADHD. His decreased academic performance began in

high school, and continued to decline in the beginning of college. He recalled that his teachers did not know he was diagnosed due to HIPA, although it was implied that they knew. He would go to the nurse to take medication halfway through the day in high school. Tom implied that one of the best ways for him to learn was through the “flipped classroom model” where he was assigned material before class started, and was then able to teach himself the material. In the next class period he would go over any problems he ran into so he could work out the problems and learn how to fix them.

Through Tom’s learning he said that: “Having a teacher regurgitate information from a textbook does nothing for me. Unless I work through real life examples, allowing me to see the practical applications and nuances.” When giving advice to teachers, he talked about how they should understand every student learns differently (not a one-size fits all model), and that they should, “explain concepts in more than one way.” He also talked about how children should be taught, “how to think about solving problems,” and to, “teach people how to think.” Lastly, when asked if the diagnosis made a difference to his learning, Tom replied, “The diagnosis, no. The medication, yes.”

Through analysis of Tom’s data, I found that he is an independent learner. His responses could be based off of family circumstances. He likes to figure problems out in varied/ multiple ways in order to make information accessible. There is a sense that medication may have helped him through college, but both Matt and Tom found that in the K through 12 classrooms, it did not help them learn. Tom was not diagnosed accurately. He was given a two minute conversation where he told his doctor he needed medication. Therefore, when I asked about what helped him learn in the classroom he replied with medication and said that, “it drastically impacts my ability to focus on multiple possible paths to a solution versus trying the same road that leads nowhere.”

Dave

Dave was the last participant interviewed. This former student was diagnosed in college at the age of 20 with ADD and minimal hyperactivity. He also self-advocated, and was diagnosed because of his declining academic performance in college. He had an extensive psychological report that lasted hours in order for the diagnosis. Educators were not informed when he was diagnosed. When asked about strategies teachers used with him in the classroom that have helped him, he replied “None.” A strategy that helped him learn was to take notes, even if they were already in a textbook or online. He also used index cards in order to recall information. When asked about what teachers can do to help students in the classroom, he said “accommodate” each individual student and to give them “extra testing time.” Lastly, when asked what helped him learn in the classroom he replied, “The diagnosis of stimulant medication” to help him recall information and improve his “academic performance.”

I found that Dave was a kinesthetic learner and used multiple ways to help him memorize information in college. He emphasized how to learn using varied ways to access information, in the same way Tom described. Dave agreed that medication helped him through college. Unfortunately, he was not diagnosed in high school to really know if the medication would have helped him back then. Tom and Dave also discussed the ability to help learners at a young age and to “intervene” as soon as possible. They also talked about how medication helped them through college, and also their diagnosis.

Of the three participants, only one reported specific strategies aimed at helping students learn (recording lectures, guided notes). It is fair to say that these are three cases, but they could not recall any specificity. This is a research trend. The themes that I concluded based on this data analysis are:

1. Medication
2. Mandated testing accommodations
3. All participants discussed how teachers need to work with students individually, and that they did not provide them with adequate “accommodations” (supports).

In the next section, I revisit the emergent themes and deliberate how these strategies and supports connect to extant research. I consider what this data might mean for school-aged children diagnosed with ADHD.

Discussion

Medication

Two of three participants noted that medication helped them tremendously: “The diagnosis and use of stimulant medication was extremely helpful” (Dave). Dave was prescribed medication for college through an extensive psychological evaluation in three, one hour sessions. Another participant responded with: “It drastically impacts my ability to focus on multiple paths to a solution versus trying the same road that leads nowhere” (Tom). Tom was prescribed medication after a five minute conversation with his pediatrician in high school.

One, however, indicated that he tried medication X, but decided to stop because “high school students should not use medication. I don’t think high schoolers should be able to take it. In high school it didn’t make my grades go up and didn’t improve my focus really... I didn’t see the point. I think it’s because in college I cared so much about my classes and it definitely made a difference” (Tom). One of the participants had stopped taking medication in elementary school because his parents observed that: “I was not myself anymore. I was just there” (Matt). Matt was prescribed medication through his pediatrician in kindergarten. Why did two participants not want to, or think that medication could be harmful to children in K through 12 classrooms?

Research suggests that children as young as 6 are prescribed medication as a treatment for ADHD (CDC, 2014), just as Matt was prescribed medication. According to Willer (2013), a psychiatrist who studied, screened, and interviewed children based on their disorders, and analyzed the treatment that would be helpful, some children will refuse to take stimulant medications due to side effects such as loss of appetite, weight loss, mood swings, etc. Matt had also denied taking medication because of the reasons for “not being himself.” ADHD medications may also impact some cognitive functions but not all in a positive manner. Participants taking the drug Adderall, for example, may also have side effects such as depression and anxiety (Willer, 2013).

In the *Journal of Medical Ethnics*, Erler (2013) interviewed over 150 children in the United States and had argued that “medical professionals could play a key role by spending more time listening to children in order to get a deeper understanding of the individual nature of their problems, rather than relying on a more cursory approach that is limited to diagnosing and treating the symptoms of ADHD” (p. 357). Through these interviews, children were described as not being fun and that their “authenticity” had been taken away from them because of stimulant medications. In Matt and Tom’s case, stimulant medication was not the answer to treating their diagnosis in K through 12 classrooms. This study suggested that children will benefit from talking to professionals, rather than being prescribed the medication.

In *The Journal of Law and Education*, Ainsworth (2015) discussed that more college students take medication for ADHD because behavioral treatments are no longer visible in the college classroom. She suggests that students can have more behavioral interventions in the K through 12 classrooms, and that students should be allowed to have daily recess as a part of an intervention. Tom had stopped taking medication in high school, and then started taking it again

in college. Dave was diagnosed with ADHD in college, and believed that medication was the treatment for his diagnosis. Could it be that the college environment is more challenging and self-advocating than the K through 12 classroom environment?

Mandated Testing Accommodations

Two of the three students recommend that the provision and following of test accommodations are important in that “each student will have different issues” (Dave). The participant also believes that educators should “find ways to accommodate them (students) on an individual basis (Ex. extra testing time)” (Dave). Dave never registered with the college that he had ADHD, but believed that having accommodations would be helpful towards students with the disorder. One of the participants had recalled that he was given accommodations on his Individualized Education Program (IEP), but they were not accurately provided, in that he was “supposed to get word banks, but that never happened. Extra time and tests were read to him” (Matt).

Why would a student need his tests read to him if he was diagnosed with ADHD?

According to NYSED (2011) testing accommodations are mandated by New York State in which, “the IEP must indicate the individual testing accommodations needed by the student, if any, to be used consistently by the student in his or her recommended education program, in the administration of district-wide assessments of student achievement and consistent with Department policy, in State assessments of student achievement that are needed by the student to participate in the assessment.” Matt was given testing accommodations of having a word bank and test read to him. He was not given word banks even though the state had mandated that he should have them, but he was given tests read to him. According to Goldstein (1997), who wrote *Managing Attention and Learning Disorders in Late Adolescence and Adulthood: A Guide for*

Practitioners, students with a learning disability may think that “reading is too much work, and it is not automatic” (p. 22). Of the 13 disabilities total, Matt is classified under the category of Other Health Impairments, and not Learning Disabilities (NYSED, 2011). So, why would Matt have his tests read to him if he had ADHD? Could it be that educators and professionals really do not know what accommodations students with ADHD need?

Dave recommended that students should have extra time on their tests. It is likely that students will “struggle to maintain extended effort” on a task and that it is the “individual’s inability to invest in a task” (Goldstein, 1997). It was found that more students diagnosed with ADHD are not distracted by the surrounding environment, but it is more likely that they are uninterested with the task in front of them. Interesting. Therefore, in a testing situation, students with ADHD may need more extra time because of the disinterest in the exam.

According to these findings, it seems as though there are many misconceptions as to what students need, and for what reasons they may need supports and strategies.

According to DuPaul and Stoner (2014), who wrote the latest version of the book *ADHD in the Schools: Assessment and Intervention Strategies*, throughout education, it is “assumed” professionals working with children of ADHD should have proper training of interventions. Through multiple observations and case studies of students in the elementary level (K through 5), this book was written to help educators understand how to change their environment of teaching to help students diagnosed with ADHD. Accurate evaluations should be administered to elementary and secondary students. Professionals (such as teachers) should be well prepared to work with students of ADHD. If being prepared is an “assumption,” then are teachers really prepared to work with students diagnosed with ADHD? (DuPaul & Stoner, 2014).

Pindiprolu (2014) conducted a case study and reported over 25% of education personnel had contained limited knowledge on the causes, prognosis, and treatment of ADHD based on a survey called the “Knowledge of Attention Deficit Disorders Scale.” The survey was then administered 5 years later, in which educators still had very little knowledge. This research article emphasizes that teachers need to have knowledge based on cause and effect of ADHD, and they have very little knowledge currently. If teachers are unaware of ADHD or have little knowledge pertaining to it, students will have a more difficult time in the classroom. Zambo, Zambo, and Sidlik (2013), observed teachers in the classroom with students diagnosed with ADHD. They were then interviewed based on those observations, in which most of them knew when a student was acting out, but did not use accurate strategies to guide those students back on task. This case study suggested that teachers should be provided with classes in college related to ADHD to better prepare for the classroom.

Both Dave and Matt believed that test accommodations and following through with them would benefit their diagnosis. Although, the accommodations recommended on the IEP may not have been accurate or even implemented at all. Are teachers and professionals unaware of what strategies or supports to use for students diagnosed with ADHD?

Supports (Individual Basis)

All three of the participants founded accommodations that impacted their own ways of learning in the classroom: “One of the best ways for me to learn has always been in using the ‘flipped classroom model’ in which material is assigned ahead of the lesson and you essentially teach yourself the material and work through a problem set and the next class go over and work out any kinks or problems that you came across. That way you can see where you went wrong in your line of thought and how to fix it next time” (Tom). This strategy worked for Tom

throughout high school. Another participant suggested that he “wanted to prove others wrong and it made him pay more attention during class” so he would “redirect himself to stay focused” (Matt). Matt did not want medication; he motivated himself to cope with his own disorder. The last participant used the strategy of “writing very detailed notes during class, even if the information can be found elsewhere (such as a textbook).” He also said that “the use of flashcards also aided in his memory in order to recall abilities” (Dave). Dave also suggested that in his psychological report, it was concluded his short-term memory was of a 12 year old due to the disorder. Like Matt, Dave also advocated for himself towards his own learning. All three of these participants decided to use their own strategies and supports towards their own learning in the classroom. Essentially, the participants described their own strategies, but in reality, could we really call these strategies for ADHD?

Two out of the three participants had suggestions for teachers to support individual learning such as, “realizing that learning isn’t a one size fits all scenario. It is the educator’s responsibility to be able to explain concepts in more than one way” (Tom), and to “find ways to accommodate them (students) on an individual basis” (Dave).

First, Lage, Platt, and Traglia (2000) defines the flipped classroom model: “inverting the classroom means that events that have traditionally taken place inside the classroom now take place outside the classroom and vice versa” (p.32). Essentially, the teacher and the student switch roles and the student will teach him/herself, which is what individual learning is. The student will watch videos outside of the classroom to teach themselves the material for class. In Tom’s situation, this was the best strategy that helped him in high school in order to learn.

In Dave’s circumstance, he took detailed notes each class even if the slides were up for him to print out or watch. According to Goldstein (1997) one of the symptoms of ADHD is

described as “often fails to give close attention to details or makes careless mistakes in schoolwork,” and, “has difficulty sustaining attention in tasks” (p.38). Could it be that Dave needed to rewrite notes because it helped him stay focused and remember what he was learning? A person becomes the most inattentive when tasks become repetitive, uninteresting, and requires effort of which is not of the individual’s choosing (Goldstein, 1997). Dave aided his own learning throughout college, and by taking notes during class, he monitored his focus and memory.

According to Harris, Friedlander, Saddler, Frizzelle, and Graham, (2005) in *The Journal of Special Education*, in order to help students with ADHD, self-monitoring and self-regulation would benefit students. The study focused on students with the learning disorder in a self-contained classroom. Four students were given attention monitoring on spelling words and performance monitoring. In this case study, students were able to self-monitor themselves in the contained classroom for about an hour. Matt realized that the only way he could learn is if he motivated himself to keep going. Is the class size the issue for students with ADHD? Should students be required to have breaks throughout the day in a separate classroom? According to Sherman, Rasmussen, and Baydala (2008), they also suggests the more positive and patient a teacher can be, with the knowledge of the disorder and collaboration with other teachers, students will respond better in a classroom setting. They observed teachers in the classroom, and found that teacher beliefs are recognized by students with ADHD and that those teachers that strived to coach those students were able to have greater impacts in the classroom.

These studies suggest that when teachers take the time to recognize each students’ individual supports and strategies, and provide instruction based on their needs, these students will become more successful in the classroom. Students need multiple ways of learning if one

way does not work, and the research suggest teachers need intervention strategies based on the diagnosis of ADHD. Both Tom and Dave suggested that teachers need to help students based on their individual needs.

All of the information provided by Matt, Tom, and Dave were highly effective to understanding what helped them cope with their own ADHD. But essentially, it is still hard to understand what would benefit other students with this disorder.

Conclusion

The purpose of this study was to explore which strategies and supports best provide for students in the K through 12 classrooms diagnosed with ADHD, because of the increasing amounts of students that are diagnosed each year. Despite conducting this study, many questions remain unanswered. Based on the participants' answers and my own interpretation, I am still left unaware of what strategies and supports may help benefit students with ADHD. I have come to the conclusion, based on my research, that students and teachers are unaware of exactly what supports and strategies work best towards students with ADHD.

Each participant identified different strategies and supports. Goldstein (1997) confirms: "the outcome and profiles of adults with histories of ADHD vary" (p. 374). All participants had to motivate themselves to keep learning in the classroom. While some of the participants suggest medication may benefit some students with ADHD, they did not have suggestions that were seemingly specific.

Implications

Given that there will be at least one child in every classroom who is diagnosed with the disorder (CDC, 2014), it is important to find strategies and supports that help students with ADHD based on the participants' responses.

Participant Recommendations

Based on the participants' responses, I examine the recommendations that best suite students with ADHD. One recommendation for teachers to take into consideration would be to understand the diagnosis of ADHD. Because of the changing definitions, from the DSM-III, DSM-IV, and DSM-V, ADHD is continually growing and is becoming more essential to understand due to the increasing amounts of children diagnosed. One way to help teachers and even students understand ADHD is to create more programs and services: "The number of individuals with ADHD is increasing as quickly as the ability to identify these problems accurately in childhood improves. This increases demand for services and programs as these children and adolescents become adults" (Goldstein, 1997). An example of a program that would be beneficial for teachers is more professional development about the disorder. Vitanza (2014) conducted a study in which teachers were interviewed based on their perceptions of interventions used in the classroom. The results show that teachers felt strongly about implementing interventions for students with ADHD in their classroom, but they would still like intervention training on ADHD. They felt that the need for more staff impacted the effectiveness of intervention for those students diagnosed.

Along with implementing training on interventions, it would also be beneficial for teachers to understand the different types of medication prescribed because of the diagnosis of ADHD. Different kinds of medication impact students in multiple ways, and teachers should be

aware of the impact they have on their students. In some cases, both medication and interventions impact students in the most positive way. In a case study described by Goldstein (1997), a male adult had short-term memory issues in which he was prescribed medication and a text designed to help him with organization and memory, in which Dave had used to help him in college. In another case, an adolescent was prescribed counseling along with small doses of medication. One other case prescribed medication along with videos, just like how Tom had described had helped him in the flipped classroom model (Goldstein, 1997). There are also multiple types of medication such as prescribing a student 25mg of Ritalin as compared to the maximum dosage of 75mg, which may impact sleepiness in a child and performance. There are choices such as methylphenidate which requires the dosage of 10mg as compared to the maximum of 20mg, which can impact sleepiness, appetite, and anxiety in children (Goldstein, 1997). Many of these symptoms need to be taken into consideration, especially in the classroom. Teachers need to be aware of the impacts these stimulants may also have on students.

Another implication for teachers is to get to know your students, and provide the counseling they need or may benefit from. No matter what type of organization or video strategies that may be out there provided to help a student, they need that support to guide their learning from their teacher. Tom, Dave, and Matt had to motivate themselves to learn, and they would have benefited from the coaching and counseling to help them from their transition from high school to college (Goldstein, 1997). While it is recommended that some students are to have counseling to help them with these strategies, it is important that teacher provide the motivation they need in the classrooms. For the students that do not want coaching, it is also important to observe and analyze their interests to determine their motivation. In Matt's case, he had to motivate himself through his diagnosis without the aid of medication. As a teacher, it is essential

to find that one technique that will inspire students with ADHD to learn. Overall, Goldstein (1997) recommends the steps towards success in the classroom involve direct instruction, monitoring, and consultation.

Others' Recommendations

Although this study's participants did not help me fully understand strategies and supports deemed helpful, they did prompt me to seek out other answers about what could benefit future students. What the participants did help me understand is that each student learns at his/her own pace, and that it is important for teachers to consider each student's individual learning needs. Through their answers I realized: "Teachers can help all students perform better if the adults understand the developmental nature of executive function and the way the classroom and other school environments can be constructed to enhance executive skill sets" (Kaufman, 2010). Executive functions are when students need self-regulating skills such as organization. Through this study, I have learned that many teachers may be unaware of what ADHD is, and what strategies and supports to use such as organization.

Organization is one area that the participants did not discuss. Organization, however, is critical to supporting students with ADHD. According to Kolberg and Nadeau (2002), organization is an important aspect to focus on for people diagnosed with ADHD because of the distractibility, inattentiveness, hyperactivity, or stimulation issues. Kolberg and Nadeau offer strategies and supports around organization and day-to-day life. They share strategies such as creating schedules, breaking down tasks, planning step-by-step instructions, and developing habits and routines for children and adults. These researchers not only discuss strategies and supports that could benefit students in the classroom, but also in their home life. More specific

strategies include: organizing papers and money in different folders, reminding students to organize their materials, managing a consistent schedule/ checklist, keeping a routine, providing the person with a “clutter buddy” to help them organize, providing them with a coach to talk with, focusing on one task at a time, etc. One of the most important strategies is to have students set goals. Another strategy is to show students examples of how to organize their life. A third strategy is to start small so that way early successes are more likely. Starting small is absolutely critical as students with ADHD can be overwhelmed by trying to do too many things at once. These researchers discuss that by picking a few strategies or supports, and by having students master these strategies, students with ADHD are more likely to experience long lasting change.

Limitations

This study contains many limitations. The sample size of three participants may be too small to determine the outcomes of this study. Another limitation along with the sample size of the participants includes age and gender. Although this study would have benefited from having a larger sample size, it also would have helped if there were a mixture of males and females in the sample instead of all males interviewed. All three participants were different ages ranging from 20 to 24. Although it took three weeks to conduct the study, it would have been more favorable to have all students in college so that way they were well aware of the strategies they used in school on a daily basis. They were all diagnosed with this disability at different ages. The data would have been more beneficial to collect from participants that were diagnosed with ADHD around the same age.

Future Research Needs

Understanding the strategies and supports that would benefit students with ADHD is required to helping that succeed in their academics. Future research should examine students with ADHD and the impact of the different types of supports and strategies that might benefit their overall academic performance. It could also be helpful to observe students in the classroom in order to understand the strategies and supports they use, along with interviews. Examining the different types of strategies and supports used in the classroom might signify growth in academic success.

Future research should also focus on the implementation of strategies and supports in the classrooms along with interviews. Talking to the students about what types of techniques would benefit their learning in the classroom. Also, implementing those strategies in the classroom and supporting their needs through trial and error might service their academic learning. Research needs to be done by investigating what specific types of supports and strategies will benefit students in the classroom.

Overall Significance of this Study

The purpose of this study was to explore the strategies and supports that will benefit students with ADHD who have already been in the K through 12 classrooms, in order to decrease future dropout rates in high school and beyond. Through a series of interviews with students out of college, I was able to learn about each individual technique that each participant had used when they were students. Although specific strategies and supports were difficult to determine based on the participants' responses, I was able to determine which strategies and supports deemed helpful based on Goldstein, Kolberg and Madeau. Furthermore, I hoped that this study was able to inform teachers and literacy specialists, like myself, how they can employ strategies

and support students to help bridge this academic gap in learning because of this disability. As educators, it is important to understand the strengths, and also the needs of our students that may be getting in their way of learning. After all, “Identification through careful assessment, intervention, and accommodation through careful treatment, and implementation and support through advocacy and education are making and will continue to make a positive difference in the lives of adults,” and children, “with ADHD” (Goldstein, 1997).

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