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Evidence-based behavior interventions for students with Autism Spectrum Disorders in inclusive secondary settings

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Chapter 1: Introduction

Effective behavior management in the classroom is essential to productive teaching. Behavior management often presents tremendous challenges to students, teachers, and administrators. In a study that was conducted in 2004 77% of teachers acknowledged that disruptive students negatively impact their ability to teach effectively. With so many behavior management approaches, helping students improve their conduct in the classroom is tremendously difficult because there is not a single strategy that fits all situations or all students. Due to the uncertainty of each situation that can be presented, educators are required to be equipped with varied and diverse tools to achieve effective behavior management (Sebag, 2014). It makes it incredibly difficult with the drastic rise that comes from those being diagnosed with Autism Spectrum Disorders. The prevalence of autism diagnoses more than doubled between 2002 and 2010, with high co-morbidity with intellectual disability complicates the education of these students with disabilities. Especially with it being often that there is nothing shown how someone with ASD differentiates from other people. There can be some people with ASD that needs a lot of help in their daily lives; others need less (Signs and Symptoms of Autism Spectrum Disorders, 2019).

This project aims to focus on students in the secondary level who have ASD. Students with ASD often exhibit difficulties with executive functioning, a broad term used to describe metacognitive functions, such as managing tasks, planning actions, and controlling impulses; working memory, the ability to retain short-term information for processing at a later time; and theory of mind, the ability to think about and understand what another person is thinking (Pas et al., 2016). This tends to be rather challenging for those students in the secondary level due to

larger classroom sizes with multiple transitions throughout their school day. Students with ASD have trouble remembering and tracking different teachers' expectations and course requirements, which can lead to negative behaviors. These may include physical aggression, refusal, or outbursts. As students with ASD is on a rise, there needs to be a transition focus with school personnel needing professional development to better support students. To target teacher practices is considered consistent with the public health approach of prevention and likely an effective way to address the complex needs of multiple children with ASD. Research has demonstrated that special education teachers are lacking training and support in implementing evidence-based strategies when instructing students with ASD (Pas et al., 2016).

Importance of the topic

There is a continued increase of enrollment for children with autism spectrum disorders in special education, making it challenging for school-based programs and providers to expand. Currently as of 2020, the CDC estimated in the US that 1 in every 54 children had a diagnosis of Autism Spectrum Disorders. Research has begun to suggest that interventions should be based on the students age as classroom types and teacher fidelity plays into which intervention should be selected (Suhrheinrich et al., 2016). This seems to be more apparent in the secondary setting.

Secondary education is often a difficult time for students as they are learning so many different things not only academically, but also emotionally and socially (Robinson & Bond, 2017). This tends to be more difficult providing successful interventions to students that will help them be a success in the inclusive classrooms because what they are facing personally and as a student. In addition, teachers also have to be aware of when determining an intervention,

schools must, by law, implement interventions that are strongly supported by scientific research whenever possible (Robinson & Bond, 2017).

Students with autism are able to be successful in the inclusive classes as long as they have accommodations/modifications and their teacher being aware of their characteristics and learning needs (Saunders, Page, & Wood, 2011). Which provides insight to the importance of breaking down evidence-based interventions and why they are important to support not only the students' academic progress in the classroom, but the social emotional support as well in regard to individuals with autism relationship with peers, teachers, and parents (Locke et al., 2010). The following question is important to further explore the different types of evidence-based interventions and how they can create a more inclusive environment for students with ASD.

Research questions

What are the evidence-based interventions that are shown to improve behaviors for students with Autism Spectrum Disorders in secondary settings?

Initially there was only one data base used to find information for this research paper but ran into concerns of appropriate resources that were 2010 or newer. During the peer review other data bases with research journals were discussed and used for this paper. Once sufficient information was gathered from journal studies that were originated in the United States, which were seven different articles discussing the current research on evidence-based practices and their usages by both general education and special education teachers, the focus then transitioned to interventions and autism. Sixteen different articles that cover a wide range of interventions to be used or could be used at the secondary education level. The search keywords were: *evidence-*

based practices, autism behavior interventions, teaching autism, problems in education for autism.

Twenty-three studies have been selected for review of literature that will be further discussed in chapter II. The research articles that have been compiled range from dates of 2010-2018. The studies that were included for review were designed to discuss interventions that can be used by special education or general education teachers for students with ASD at the secondary level.

Definition of Terms

- **Antecedent procedures:** These procedures involve manipulating some aspect of the environment to evoke a desired response to make an undesirable behavior likely to occur. These procedures are considered proactive as they involve altering environments or routines prior to the occurrence of the problem behavior. Antecedent procedures that have been used with children with autism in the general education classroom have been priming, prompt delivery, and visual schedules. Priming consists of allowing a child to preview information or activities before the student actually participates in the activity. This process can preview future events such as a fire drill, substitute teacher, field trip, a rainy day, a gym activity, or a science lab so things are able to become more predictable. This can facilitate the inclusion of students with ASD as it links individual instruction to larger classroom group activities. There is also video priming that has been shown to be effective in decreasing challenging behaviors during community school trips. Prompting strategies as well are known to be successful

in supporting the inclusion of students with autism. Prompts that supplement the general instruction routine are needed to elicit responses to academic or behavioral activities. In one particular study, it compared two prompting strategies to facilitate school transition times that involved a peer buddy prompting condition and a teacher prompting condition. Both conditions resulted in an increase in appropriate behaviors while the teacher prompting condition was found to be superior for all transition settings. In a different study, peers who prompted interactions with students with ASD increased the interactions with students with ASD (Crosland & Dulap, 2012).

- **Delayed Contingencies:** For students with autism to be successful in general education classes, there needs to be a degree of independent academic functioning. Past research has indicated that whereas success has occurred in increasing independence under close adult supervision, removal of supervision has resulted in the reappearance of challenging behavior and a decrease in appropriate behavior. The failure of behavioral gains could be the result of removing or decreasing contingencies, such as positive reinforcement. This is why an unpredictable schedule has been studied and it has been found that on-task behavior and productivity were higher during periods of no supervision after the use of an unpredictable schedule when compared to a predictable schedule of supervision that was in place (Crosland & Dulap, 2012).

- **Self-Management Strategies:** Various components of self-management include student selection of goals, student's own self-observation, and recording of

student behavior as well as the student administering their own reinforcement. These strategies promote classroom independence by shifting responsibility of behavior management to the student. Self-management has been shown to promote independent functioning even to the point of a student no longer needing one on one aide and showing less reliance on the teacher. Having less dependency on adults, students have more opportunities to interact with classmates and be more involved in classroom activities. It has been found that social skills/interactions/independent work skills with the use of self-management procedures have increase (Crosland & Dulap, 2012).

- **Peer-mediated interventions:** Peer-mediated interventions emphasize the involvement of typically developing peers with those that have ASD to promote appropriate communicative and social behaviors. As a way to improve social reciprocity and initiation on the part of the ASD student in more natural social contexts, peer-mediation interventions have been found effective in providing social learning opportunities, peer modeling, and peer reinforcing. Peer tutoring has been found helpful to improve on-task behavior, math performance, and social interactions for children with ASD in inclusive classrooms. Class wide peer tutoring involving pairing all the children in the classroom has resulted in gains in areas of reading and social interaction between children with ASD and their peers (Crosland & Dulap, 2012).

- **Standardized model for individualized interventions:** An effective approach, for addressing problem behaviors in the inclusive setting for students with

disabilities is positive behavior support (PBS) which is a well-established process of functional behavioral assess and assessment-based interventions. Apart of PBS is Prevent-Teach-Reinforce (PTR). This is a model that is designed to use in the classroom setting to meet the need for a standardized model of function-based behavioral intervention for students with severe behavior problems. This model includes a process of conducting a functional behavior assessment and then use the results to develop intervention plans. It contains 5 steps:

- o **Step 1:** The team comes to an agreement on how the team will function that includes methods of gaining consensus and assignment of responsibilities.
- o **Step 2:** Identifying and defining the social, behavioral, and academic targets.
- o **Step 3:** PTR Assessment that includes direct and indirect observations covering three categories relating to antecedent variables (Prevent, function and replacement variables (teach), and consequence variables (Reinforce).
- o **Step 4:** Intervention requires the team to select interventions that will match the hypothesis and represent each intervention component. This step includes a plan for training and coaching adults to implement the strategies as indented.
- o **Step 5:** Use data collected to make decisions about the plan's effectiveness and subsequent steps (Crosland & Dulap, 2012).

- **Organizational/System Change Strategies:** A key variable for success of students with ASD in the inclusive setting is the overall school environment. The philosophical practices and polices a school create are instrumental in creating the level of receptivity to the general educational inclusion of students with disabilities. Two initiatives that have helped with this success are response to intervention (RTI) and schoolwide PBS (SW-PBS). RTI is an approach to establish and redesign teaching and learning environments to improve effectiveness and efficacy for all students and educators. It is a problem-solving and decision-making model based on a multitiered prevention framework that has been common in public health and also appeared in education and early intervention. RTI is defined by the following features: (a) universal screening to identify students at risk, (b) ongoing progress monitoring to identify students who may need additional support, (c) a continuum of evidence-based interventions that vary in intensity and are applied in accordance with individual student's needs, (d)data-based decision making and problem solving, and finally (e) implementation fidelity for each level of the model to ensure practices are implemented with consistency and accuracy. The focus of RTI is primarily on academic curriculum and instructional practices and slowly it has been suggested that the RTI framework could apply to social-emotional and behavioral disorders. RTI are represented in SW-PBS has been described as a model for preventing the escalation or problem behaviors of children with ASD. SW-PBS is a systemwide three-tiered prevention model that includes primary (universal system strategies for all students) secondary (interventions for specialized groups, classrooms, or students with at-risk behavior), and interventions for students with severe behavioral

problems. With the SW-PBS, all students will receive supports at the universal or the

primary tier. If the behavior of some students is not responsive, then more intensive

supports are provided at the higher tiers of secondary or tertiary. There are compelling

reasons to believe that a building with appositive school culture at the universal level can

have a significant impact on students with ASD in the inclusive setting. These strategies

for success include gaining administrative support from school leaders, building capacity,

sustaining and expanding funding, data-based decision making, and team decision

making. Implementation of effective SW-PBS can result in fewer students that require

intensive supports leading to increased resources to address instructional and behavioral

needs. Within the SW-PBS model, secondary interventions could include social skills

groups or increased reinforcement contingence that include PRT or check in/check-out.

PRT has been great as a naturalistic intervention model that derived from the principles

of behavior analysis. PRT targets pivotal areas of child's development as motivation,

self-management, social initiations, and responding to multiple cues versus targeting

individuals' behaviors one at a time. Motivational strategies that could be used are

including student choice, task variation, usage of direct and natural reinforces, and

providing clear instructions. Check in/check-out (CICO) has been shown to be effective

in reducing problem behavior and increasing academic engagement. CICO is a daily

system which a student checks in with a designated adult in the morning to develop

behavioral goals, then the student carries around a point card that provides adult feedback

on expected behaviors. At the end of the day, the student will do a check out with the

designated adult and a reinforcement for expected behavior was provided (Crosland &

Dulap, 2012).

Summary

This research will expand on different types of interventions and the impact they have on

ASD students. As a result, not only will general and special education teachers but also

administrative staff will understand the importance of interventions and how it can be used

within their school building.

Chapter II: Types of Interventions

Interventions is considered to have a combination of program elements or strategies designed to produce behavior changes among individuals. The type of intervention is dependent on the student and situation. The following types of interventions have been proven, through research, to have a high successful rate among students with ASD.

Social Skills

Social skills are a core deficit of adolescents with autism spectrum disorders (ASD). This is of great importance due to children with autism having poor peer relationships by definition despite of their age and ability. Social problems typically will begin to accelerate, and feelings of loneliness and isolation emerge. Given the social skills deficit, often the traditional views have assumed that individuals with ASD lack the desire and the skills that help foster meaningful relationships with others. Recent research has refuted this claim though, as of late, stated that some individuals with autism report having at least one relationship (Locke et al., 2010). Even with research increasing in these areas, it is still relatively known as inclusion is an increasing practice in both primary and secondary education. Those with ASD have many opportunities to interact with their same aged peers. With the social deficits these opportunities often become overwhelming when the student with ASD has class changes each class period. This has resulted in adolescents with ASD to feel a great deal of loneliness in the world of secondary education. While considering loneliness in individuals with autism, it is important to determine the types of friendships that neurotypical children have (Locke et al., 2010).

The social practices of ASD impacting their ability to create friendships in the inclusive setting also depends on the social practice of their peers that will either assist with intergrading

or isolating students with ASD. This can fall back to neurotypical peers' attitudes regarding their peers with ASD and it has been found that those with the full disclosure of their peers' diagnosis are found to have more social support at the elementary level. At the middle school level, providing descriptive and explanatory information about students with ASD to those without results in more positive attitudes towards students with ASD. With this knowledge equipped to professionals, parents, educators, and support personal all agree that interventions addressing the social skills of students with ASD are needed if students are expected to increase independence and success. Such a lack of training to support these students have led general education teachers not feeling prepared to support these students in an inclusive model of teaching. The lack of training even leads to some general education teachers holding misconceptions related to ASD (Able et al., 2015). The following research was conducted based on different types of social skill interventions that was given to students with ASD in different settings within a school.

Evidence Based Interventions with Peers

Not only are there many evidence-based interventions that can take place inside of the classroom, but there is work that can be done outside of the classroom as well. It has been found that there is very little research published relating to systematic procedures for improving socialization among adolescents with ASD. This reason has led to research on the efficacy of successful social interventions for adolescents with ASD. This seems to be especially important when considering the growing number of children that are approaching this age range have risk factors of developing co-morbid disabilities as a direct consequence of difficulty with peer interaction (Locke et al., 2010). To help increase student socialization during unstructured school activities there has been research reviewing the opportunities in the form of lunch clubs. This

research seemed to be based around aspects of the adolescents with ASD perseverative interests that can promote positive direct and generalized social interaction.

Interaction Research

In one such study that followed the impact of lunch clubs, it was found during baseline measures that participants did not show social engagement or initiations. During interventions, results showed a large increase in both social engagement and initiations. The participants apart of their baseline data participated in regular lunchtime activities and no instruction was given prior to the intervention. Each participant with ASD, a social club was formed around their perspective interests. At no point during the social club was the student's diagnosis disclosed to any of the peers that were participating in the club nor were the participating peers informed that the club was developed around the ASD students' interests. Throughout the study, during the baseline study with the participants, zero or near zero percent of the intervals the participants engaged, and they were socially isolated in every session with no improvement. This took place in spite of the fact of numerous clubs available for them to attend during baseline. Once the participants were involved in the interventions, participants improved their interactions with the peer. The study that measured the progress of three individual participants in social clubs found that they clearly can appropriately engaged and initiate in social environments with their typically developing peers. All three participants positively responded to intervention not only by increasing their percent of intervals engaged with their typically developing peers but also increased the rate of initiations during the sessions. It was found that providing a structured club that had incorporated themes of activities around the participants interests helped increase initiations and engagement with typically developing peers. The three participants in the study

found a great success with the peer interaction groups and formation of friendships. Two of the three participants had gone from receiving no invites to any birthday parties from peers before the club began, to friendships beginning to form and then soon they began to receive multiple invitations to peer's birthday parties. Past studies have identified that youth clubs for adolescents with ASD helped foster positive social interactions with other students. To that end, multiple studies suggest that specially designed individualized activities can be very important in helping adolescents with ASD develop social relationships with typically developing peers. In the study being discussed, it is important to note that while there was an adult facilitator at these clubs, the clubs were mostly mediated by peers. Meaning that students did most of the talking and directing the club activities. This is important as research has demonstrated that peer-mediated interventions promote positive development of friendships and also have great potential to exhibit generalization outside of the clubs (Koegel et al., 2012).

Network Research

In addition, there has been studies completed in the area of peer networks and the effects that those have on the high school level with students who have ASD. In one such study that followed two high school students which one was primarily in the inclusive setting and the other student primarily receiving his education in the special education setting. To help create and ensure the correct usage of a peer network group, there had to be facilitators who neither in this study had facilitated a peer network group before. It is more ideal that facilitators have prior experience in supporting students with disabilities. Both facilitators were asked to recommend two peers who did not have ASD, who demonstrated appropriate social skills, and who they anticipated would get along well with the focused student. They as well were from the focus

students advisory as the peer network took place during the time that is from 30-40 minutes that took place 2-3 days a week in an unstructured setting. Once the peers were recruited, the focus student, his peer partners, the facilitator participated in an orientation meeting that helped familiarize students with their roles in the group. In that meeting, it was found helpful when there was a checklist to follow on the facilitators part to ensure the intent of the peer intervention was being followed. Activities that were done were at least one joint activity as well as technology was provided to help facilitate communication. Every shared activity had at least one of these components: built in turn-taking, answering questions, cooperation, or teaching others how to participate in the activity. Activity examples included discussing current/school events, playing a trivia game, contributing to a word game, teaching the focus student how to play a card game, or the focus student teaching the group to play an arcade game. Everyone in the group needed to be included in the conversation, activity or using the devices. There were times the social network group would need to be withdrawn due to the schedule of the school year which meant there was a process where the social groups would begin to be phased out. When school would once again resume, there would have to be an intervention to reintroduce the intervention. The implementation of peer networks apart of this study demonstrated substantial and sustained increases in both social engagement and peer interactions. The high success came from the students that were enrolled in classes characterized by numerous potential conversation opportunities and few academic demands. It was found that both students with ASD would rarely initiate interactions unless there was adult facilitation and structured opportunities associated with the peer network (Gardner et al., 2014).

Behavioral Intervention

Another type intervention that should be focused on includes behavioral intervention. Behavioral interventions for students with ASD typically focus on three areas: preventative, supportive, and corrective. With this in mind, the simple act of inclusion in itself is not a stand-alone intervention. To consider how resources are to be allocated to promote interventions, it is important to consider the efficacy of interventions. Ultimately, it is important to select an effective intervention that is designed to reduce problem behavior and promote inclusion. That leads to in most cases, a Positive Behavioral Support (PBS) being selected for students with ASD. One of the themes that arise from this is behavioral approach that includes discreet trial training (DTT). DTT derives from an applied behavioral analysis that typically involves the teaching of specific skills that students with autism that may not learn naturally. In a school setting, how this would work, is a teacher will first identify an environmental cue or prompt in which the child will respond to. Following that, the behavior is then selected to respond to the cue. If the child correctly begins to respond to the environmental cue, then the teacher will reinforce the behavior (Von der Embse, N., Brown, A., & Fonrtain, J., 2011). Even though DTT is a widely recognized evidence-based intervention for children with ASD and has been used to teach a wide variety of skills, including those needed for academic success, its usage in the educational setting is rare due to the one-on-one instruction it requires. The behavior strategies that are implemented apart of DTT are time consuming and requires training. It also finds the discussion of enacting DTT a frequent criticism. In addition to DTT being an evidenced intervention for students with ASD, tired models have also been found to be effective in promoting inclusion. One such behavior approach is the positive behavior supports (PBS).

There are three levels of PBS and those are (a) universal or school wide support, (b) targeted group or classroom supports for students not responding to universal intervention, and (c) intensive individual intervention. The PBS model is effect at the group and individual intervention levels. Schools and educators who are wishing to implement such a model as the PBIS should visit www.PBIS.org for additional resources (Von der Embse, N., Brown, A., & Fonrtain, J., 2011).   More individual interventions that are important to consider when determining the tools to implement for inclusion of students with ASD are antecedent procedures, delayed contingencies, self-management strategies, peer mediated interventions, a standardized model for individualized interventions, and organizational/system change strategies.

Activity Schedules

To that end, to maximize learning opportunities and outcomes for all children, interventions should be practical to help decrease challenging behaviors and increase behaviors as classroom engagement. One such intervention that has been found helpful is the use of activity schedules to supplement verbal instruction. Often, since children with ASD have difficulty with processing and retaining verbal information, activity schedules can be a tool that educators and supporting staff can use to maintain attention, assist in comprehension of spoken language, and organize environments. The use of an activity schedule may be able to help overcome those deficits in not only social skills but as well as communication skills. Deficits in these areas create misunderstandings or confusion due to the child's inability to read social situation situations, restrictive and repetitive behaviors may occur that can include self-injury and stereotyping (Lequia, Machalicek, & Rispoli, 2011). These behaviors can often be seen hindering the child's ability to learn and can also distract other children in the classroom. These

characteristics can lead to children often becoming dependent on adults in order to stay on-task,

complete activities, and transition between activities or settings. Transitions can be difficult for

students due to their tendency to perseverate on tasks, as well as their preference to follow

specific routines. Due to the variabilities involved of all factors that come with those on the

spectrum such as setting, ASD severity, and communication abilities, it is necessary to ensure the

correct type of visual schedule is selected. Providing children with activity schedules to

supplement verbal instruction, between activities, or routines can reduce the likelihood of

challenging behaviors. Having the combination of verbal and visual communication may

increase the likelihood that children with ASD will understand behavioral expectations and

anticipate the next step to happen in their routine. For the activity schedule to have optimal

effect, it needs to include teaching the child that's using it systematic instruction including

prompts and consistent reinforcement immediately following appropriate behaviors. Activity

schedules often include representations of preferred items that may serve as reinforces for the

child. Past research has suggested that any of these variables may decrease challenging behaviors

and improve appropriate behaviors (Lequia, Machalicek, & Rispoli, 2011).

Proper Questions

Another area of concern with children in addition to worrying about the isolation and

peer interaction, is the ability to ask wh-questions. This skill is very important and one that

clinicians often do not know how to target. Questions such as why, who, where, when, and what

are especially difficult for this population to ask. Which makes it difficult for students with ASD

to develop skills that enables them to develop appropriate conversational strategies and to

request needed information. What has been found to help increase wh-questions through

modeling, prompting, time delay procedures, and tangible reinforces (Squires, K. E., & Bickel, A., 2015).

Reinforcements

Finding and using the correct reinforcements has been difficult and has left teachers struggling between choosing teaching strategies that are more contemporary and those that can be used in their classrooms. Which leads to the old credo of finding interventions that helps increase academic engagement that leads to a strong prediction of academic function. One way this is done by ensuring the best learning environment outcome to encourage learners through positive reinforcement. This can help students learn to self-monitor, manage their time, set goals, and self-evaluate through teachers. Through motivation, students learn how to learn (Rumfola, 2017). With this practice, the teacher will not need to constantly hand out treats to motivate students because they'll eventually see the reward as not being the driving force to their efforts. Grades soon become the most important force in their efforts. Even though with the best drive when it comes to academically succeeding, the overall demeanor of the classroom can predict the outcome of the students (Rumfola, 2017). In the classroom setting, teachers who seem to fail to integrate effective management find them self-spending more time addressing the behavior issues versus teaching the content. The teacher's ability to shape appropriate classroom behavior while extinguishing misbehavior is critical to the learning environment for all involved. Using positive reinforcement strategies are more effective than punishing strategies for increasing and shaping positive behaviors in any learning environment (Rumfola, 2017). Positively reinforcing students' acceptable behaviors, whether academic or social, the students and the teacher will benefit academically, behaviorally, socially, and emotionally. This prompts

further discussion of what causes misbehavior and the effective reinforcement that should be utilized. The goal of most students is getting the attention of their peers or their teacher. When attention seeking is done in a way it is disruptive to the class, it is often best for teachers to address the inappropriate behavior right away. It is noted that this will cut back on instruction time but punishing procedures will never contribute to positive feelings in any situation that occurs (Rumfola, 2017). When this happens it actually has been shown to create more of a problematic behavior. Students who act out is not always necessarily for attention but could be an escape behavior to avoid the question they are on, an upcoming turn in reading, or simply in need of a break. When destructive behavior is negatively reinforced, it can lead to an increase in socially inappropriate behaviors of others who also look to escape a situation. On the other hand, when teachers are willing to use their behavior to change their students have a higher success rate with their students as well create a closer bond. When the students are interested, they will show up to class, and any educator knows that will that is half the battle (Rumfola, 2017).

Chapter III: Research Findings

The purpose of this paper was in efforts to examine different general education inclusive interventions that will help students with autism spectrum disorders academically and socially in the secondary setting. Twenty-three studies have been selected for review of literature that was further discussed in chapter II. The research articles that have been compiled range from dates of 2010-2018. The studies that were included for review were designed to discuss interventions that can be used by special education or general education teachers for students with Autism Spectrum Disorders at the secondary level. In the studies that were reviewed discussed further current general and special educators training to these inclusion strategies, interventions that take place in the classroom as far as academics, unstructured settings, as well as peer interactions in structure settings to help with social interactions. The following are recommendations for teachers.

One area of focus apart of the research literature reviewed is that general education teachers have highlighted the need for more knowledge about ASD and having individualized strategies for those students in the inclusive settings (Von der Embse, N., Brown, A., & Fonrtain, J., 2011). Strategies being in particular is appropriate social accommodations for students with ASD. One area of note where this was stressed with the need for collaboration between general and special educators' to help make the conclusion successful. Both at the elementary and secondary levels, general education teachers were noted stating they lack confidence with special education students (Von der Embse, N., Brown, A., & Fonrtain, J., 2011). Having the lack of basic knowledge, general educators rapidly could feel overwhelmed and frustrated with meeting the diverse learning needs of students in their classrooms. Teachers apart of this study that was

reviewed highlighted the need for applied experiences in their professional preparation. That in

their professional preparation guided field experiences where general and special educators

working collaboratively in meeting students with ASD learning and social needs would be most

meaningful (Von der Embse, N., Brown, A., & Fonrtain, J., 2011). This study also noted along

with prior studies that teachers have concerns with the knowledge and training related to ASD.

This is in addition to needing skills in designing and implementing classroom-based instruction

based on learning needs and interests of students with ASD. It was, as well, expressed the need

for peer tolerance and acceptance. It has been shown that peers' attitudes and knowledge are

influential in the quality and frequency of interactions with ASD students and their peers. It

seems that with this training to provide strategies both general and special educators can promote

inclusion and success for all students. Research has suggested that the concerns outlined that

involve both general and special education teachers is professional development programs that

are founded on collaboration across disciplines in education (Von der Embse, N., Brown, A., &

Fonrtain, J., 2011). Research in this area has found that disciplinary approaches in professional

development is likely to yield more collaborative skills of professionals who have experienced

this type of collaboration in their professional development. To have true collaboration

achieved, interdisciplinary preparation requires targeted efforts to facilitate cooperation across

faculty and programs integrating general and special education teacher's preparation curriculum

(Bruhn et al., 2015).

In addition to the research that discussed teachers' feelings towards teaching in the

inclusive setting and meeting each child with ASD's unique needs, there was a study reviewed

apart of this paper that analyzing stereotypical behaviors. When talking further about the

stereotypical behavior that is presented it had been thought that these types of behaviors were a result of sensory reinforcement or a social reinforcement. When reviewing two different studies that reviewed a stereotypical behavior and the function the behavior is looking to serve, it was found that each stereotypical behavior maintained a different function. That is when its best served to perform a functional behavioral assessment that will help determine the function. When the function behavior is determined, the function-based intervention effectively reduced the stereotypical behavior. It should not be assumed that each stereotypical behavior is serving a sensory function (Bruhn et al., 2015).

One such study that was reviewed during chapter II identified multiple evidence-based practices that help with facilitating inclusion by reducing problem behaviors. When determining the intervention efficacy, the measurement of inclusion has to take place. The multiple interventions discussed throughout this study did not systematically measure of evaluate inclusion. The studies that attempted to measure the amount of inclusion often relied on subjective teacher reports or hinted at social aspects of inclusion without measuring anything. One way that inclusion can be data driven is to document the time spent in general education classrooms in pre- and post-intervention. Interventions may be measured in ways of measuring acceptance, participation, and achievement. This can be done by tracking peer and teacher interactions through systematic observations. Another way is conducting student interviews to identify perceptions of acceptance within the inclusive classroom setting. The choice of intervention and the evaluation of the effectiveness has to meet the needs of the special education population (Von der Embse, N., Brown, A., & Fonrtain, J., 2011).

Throughout at least three of the studies that have been reviewed for this paper, it was found that there is an effectiveness when students are paired with peers in academic tasks as well as increasing socialization in unstructured settings. When discussing academics, it was previously discussed that there are evidence-based practices that can help students with ASD improve their writing. This can be done by having ASD students work with their peers by having the peers act as a scribe, shared writing experiences, and having peer conferences. This is one with cooperative learning and the teaching ensuring the students that are paired work well together not only academically but as well behaviorally. Teachers will have to train peers in how they are expected to support the child and how they should respond in various situations as to what is acceptable and unacceptable behavior (Asaro-Saddler, 2015).

When discussing the interactions between students with ASD and their classmates, it must be noted that simple classroom inclusion may be insufficient to help with integration. Something that could potentially help with a successful integration is dependent on how ASD students are perceived as far as them being viewed as "normal". Having additional supports such as sensitivity training for peers may be needed to help achieve a true social inclusion at the secondary level (Locke et al., 2010).

In one research completed that entailed the implementation on social lunch clubs, it is clearly demonstrated that adolescents with ASD can appropriately engaged and initiate in social environments with their typically developing peers. In the development of three studies where engagement and initiations are frequently targeted goals for individuals with ASD are considered indicators for long term favorable outcomes. The study that was reviewed for this paper and the results apart of it are important due to the few studies that have documented the effective

naturalistic social interventions in older groups. So far to date, the majority of social interventions for individuals with ASD have often been completed with young children at the elementary age. That concludes the results of this study extending the existing body of research by demonstrating that adolescents with ASD in middle school can improve appropriate social behaviors. This can be done in the inclusive setting with typical peers only needing to use a relatively simple model approach. It is also stated that structured clubs that are around adolescent's perspective interests corroborates previous research finding of using perspective and peer-mediated interventions can improve social behavior in those with ASD. An important note as a result of this study that while there was an adult facilitator at these clubs, the clubs were mostly mediated by peers. What this means is that peers typically did the talking and directing of the club activities. These clubs apart of this study were geared towards students with ASD that were often reported stating they were socially isolated or often teased and bullied (Koegel et al., 2012).

Social clubs were not only found to have a success with students at the middle school levels, but it was also found at the high school level that implementation of peer networks within a high school advisory were substantial and sustained increases in both social engagement and peer interactions. In the study previously discussed about the implementation of peer networks, it was covered that during the baseline phase that adult facilitation and structured opportunities associated with peer network, students rarely initiated interactions and few classmates directed interactions towards students with ASD. During the baseline phase, both students with ASD almost had exclusively participated in solitary activities. During the network sessions for both students, it was observed that the type of social interactions is individual in nature and reflect

each participant social skills deficits. Meaning one participant increased his social skills interactions but at the same time was interrupting his peers and talking over them. The other participant continued to be limited in his communications, but they were still evident. In each observation it was observed that considerable variability took place in the percentages that the intervals containing social interactions. Factors that could have potentially contributed to this were the number of peers in attendance, quality of activities, and competing behaviors of the student (Gardner et al., 2014).

Feature Study Suggestions

When discussing further about general and special educators' collaboration to help with the confidence of general educators' ability to meet students with ASD needs more reach has to be done throughout multiple school districts. The student that was discussed previously were all from one school district which is very limited as inclusive programming is often facilitated differently across school districts. Having more of a nationally representative sample exploring the social challenges of students with ASD in the is needed. More information is as well needed in regard to the perspectives of students with ASD and their families. Being able to investigate the perspectives of students with ASD and their parents will help determine the most effective and efficient support strategies to ensure students with ASD benefit from inclusive classrooms. Having this understanding can inform the professional development of both general and special educators.

Implications for Practice

The thought process that was behind the research found throughout this paper is that so little appears to be known about evidence-based practices that are best used for students with Autism Spectrum Disorders in the inclusive setting at the secondary level. Initial research that

had a primary focus on what general education teachers currently know in addition to special educators is simply not enough to adequately support ASD students. Often general education teachers seem like they don't have the confidence to support the wide arrange of students needs that impacts the student success in the inclusive setting. Not only that, what educators determine to be a successful inclusion of ASD students is often opinion based that have no data that has determined that success. As the research developed further to finding best practices for ASD students in the inclusive setting, a reoccurring theme that had occurred all throughout is that when these students receive coaching and provided a structured setting that they can be a success in the inclusive setting both socially and academically. Not only is that possible, but as well in unstructured settings as social clubs, ASD students are able to increase their social interactions with the correct structure and facilitating activities in place. Everything that has been reviewed must lead to discussions that can be taken in the professional setting in regard to professional development in ASD evidence-based interventions to both inclusive classroom teachers as well as special education teachers. It would also be advantageous at the secondary level for discussions to take place in regard to school wide positive behavioral supports that will help students know the expectations they are to follow behaviorally throughout the school day versus class period to class period, which can be difficult with having up to eight different classes per day.

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