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READING EDUCATION FOR STUDENTS WITH AUTISM: A COMPARATIVE STUDY
BETWEEN THE UNITED KINGDOM AND THE UNITED STATES

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ABSTRACT

As the rates of autism continue to rise in both the United States and the United Kingdom, educators increasingly need to receive and employ the skills and information that may ensure success in reading for their students on the autism spectrum. These rising rates have inspired legislation, such as the Individuals with Disabilities Education Act in the United States and The Special Educational Needs and Disability Act of 2001, requiring educators to meet the needs of all students, including those on the autism spectrum. Both these rising rates and legislation make it necessary for educators to have the skills and information to support students with autism.

This thesis takes a comparative approach between the United States and the United Kingdom, examining specific strategies and interventions educators can use to support their students with autism within the general education classroom. As both the United States and United Kingdom speak the same language and have increasingly similar ideas on education, comparisons between the two are natural. This thesis additionally chooses to focus on the lens of reading, as the subject is traditionally a necessary component in becoming a fully functioning member of society. To begin, this thesis examines strategies and interventions recommended by previous research within the United States and United Kingdom individually. After examining these recommended strategies and interventions, this thesis then compares and contrasts the strategies and interventions specifically for reading in both countries through the lenses of special educators. With personal anecdotes, these educators of students with autism describe specific strategies and interventions they have found to be effective, as well as additional steps they recommend teachers take to create the best learning environment for their students on the autism spectrum.

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Chapter 1

Introduction

With an ever-growing emphasis on inclusion in general education classrooms, understanding the elements that make classroom environments ideal for students on the autism spectrum should be a rising priority. As more and more students on the autism spectrum are included in general education classroom, physical adaptations as well as adaptations in teaching style are needed to allow these students to succeed. In addition to this emphasis on inclusion, the prevalence of autism has also increased. This increase has also created a wealth of research on autism in the general education classroom. The combination of inclusion and increase in autism prevalence makes it ever more likely that general education teachers will encounter students with autism in their classrooms. However, many general education teachers never receive the proper amount of training during their post-secondary education to deal with children with special needs (LaBarbera and Soto-Hinman, 2009). Having a wealth of resources and knowledge to refer to would greatly assist general education teachers as they work towards creating effective environments for students on the autism spectrum.

Thankfully, as autism has continued to gain notoriety, the amount of research has grown in turn. This paper seeks to synthesize research completed in one particular area of education: reading. This research will focus on various recommended interventions and resources that can be used in the classroom to assist students on the autism spectrum in their reading education. In addition, this paper will also examine techniques that teachers state they actually use in their classroom. Since collaboration is a major component of teaching, this paper will lastly focus on strategies and interventions used between two countries with similar education systems: the United States and the United Kingdom. Through comparing and sharing strategies used in both countries, teachers from both the U.S. and the U.K. can

work together when teaching students with autism. The purpose of this paper is to then take the compiled research and its recommendations and the methods that are actually used in the classroom by teachers in the U.S. and compare them with those of the U.K. in order to showcase effective methods for teaching students on the autism spectrum how to read. These methods could be applied to classrooms around the U.K and U.S. so that each student on the autism spectrum can reach their highest potential.

On a personal level, the topic of autism hits home for me. When he was two, my brother was diagnosed on the autism spectrum. As he was high functioning, my brother was included in general education classrooms. Although his elementary school teachers were all fantastic, my sister and I had both seen the rough turn middle school took for many students with special needs. As such, my parents elected to send my brother to a school designed to assist those on who learn differently from others. The teachers at this school were highly qualified for their positions and knew exactly what kind of environment my brother would thrive in. And my brother did thrive. Unfortunately, students with autism who remain in the general education classroom throughout school do not always receive the same benefits as my brother. However, giving general education teachers the knowledge and information held by teachers with specialized training in working with students on the autism spectrum could help create environment where students with autism meet goals and achieve their potential across the board.

Legislation in the United States

Separate from simply desiring to give all students the best education possible, educators are required by laws in both the U.S. and U.K. to meet the needs of all students. In the U.S., Section 504 of the Rehabilitation Act of 1973 guarantees the rights of those with disabilities, including students. This law required school to make their campuses and buildings accessible for people with disabilities, in addition to general businesses throughout the country. In addition, this law guaranteed that every child with a

disability be allowed into any public education school. If the school does not have the resources required for the students, they need to pay for that student to find schooling elsewhere.

In tandem with this law, the Individuals with Disabilities Education Improvement Act (IDEA) was revised in 2004 to improved upon the 1997 bill of the same name to fit with the requirements of No Child Left Behind. This law extended the ideas of Section 504 while focusing directly on education. In essence, IDEA mandates that schools be accountable for the education of students with disabilities. IDEA describes many steps that schools must take to insure the success of their students. One of the most notable is placement in the least restrictive environment. This section of IDEA explains that students need to be placed in an environment that is most likely to meet their needs without depriving them of other aspects of education that they could handle. For most students, their least restrictive environment is usually the general education classroom for most of the day, and the learning support room for pieces of the day. In addition to this policy, schools also need to have an Individualized Education Plan (IEP) for every student diagnosed with a disability of any kind. This IEP must include both short term and long term goals and be created by every necessary personnel, including the student themselves, their parents, administrators, and any other teacher or support staff who is deemed necessary to that students' success. Lastly, the IEP must include guidelines for transition services beginning at age 16, so that everyone involved will know where the student is hoping to take their life after school (U.S. Department of Education, n.d.). These requirements make it necessary for teachers to meet the needs of their students with disabilities like autism. In order to do so, teachers need knowledge and resources on how to education these students best.

Legislation in the United Kingdom

In the United Kingdom, the Special Educational Needs and Disability Act of 2001 created the mandatory framework for inclusion in schools. Along those same lines, the Disability Discrimination Act

of 2001 required that schools treat students with disabilities in the same manner as those without disabilities while simultaneously improving the curriculum to suit these students with disabilities (OFSTED, 2004). These laws set the standard that schools need to meet. Since the law requires inclusion and equal treatment, having methods to properly support students on the autism spectrum is key.

In addition to these laws, the Department of Education has created standards to be met by classrooms. For example, by the end of reception [kindergarten], most children should be able to actively listen to stories, respond to questions asked of them, understand the meaning of text, how to read (left to right) and the elements of a story, experiment with sounding out words phonetically and extend their vocabulary with new words (2000, as cited in Cumine, Leach and Stevenson, 2000). These standards are applied to all students, including students on the autism spectrum. This statement means that teachers need to have appropriate methods to educate students on the spectrum so that they can meet these standards.

Defining Autism in the United States

Before discussing specific classroom details and teacher strategies, the definition of autism should be explained. With the publication of the Fifth Edition of the American Psychiatric Association's Diagnostic and Statistical Manual (DSM-V), the definition of autism spectrum disorders (ASD) was revised. In the Fourth Edition of the DSM (DSM-IV), autism spectrum disorders were divided into four distinct categories: Autistic Disorder, Asperger's Disorder, Childhood Disintegrative Disorder, and Pervasive Developmental Disorder - Not Otherwise Specified (PDD-NOS). However, with inconsistencies in application and a desire for earlier diagnosis, the DSM-V alters these categories by merging them under one title: Autism Spectrum Disorder (American Psychiatric Association, 2013).

With the DSM-V, autism is diagnosed through the presence of two main behaviors: deficits in social communication and interaction and restricted and repetitive patterns of behavior. The diagnosis is

further determined by the severity of the social impairments and repetitive behaviors, their impact on the current functioning of the child within the world, and their ability to be explained by other developmental disabilities (Centers for Disease Control and Prevention, 2014). After a diagnosis is determined, the child can receive a range of services depending upon the severity of his or her autism spectrum disorder. Once teachers understand the symptoms of autism spectrum disorders, they can then move forward in creating a suitable physical environment for students on the autism spectrum.

Defining Autism in the United Kingdom

Conversely, the U.K. defines autism in a much broader way using a definition that has stayed constant over time. In the U.K., autism is defined as a developmental disorder that impairs social interaction, social communication and social imagination in those diagnosed (Wing and Gould, 1979, as cited in Cumine, Leach and Stevenson, 2000). These impairments range in the severity of their impact on the person's life, but all will have some effect. In particular, autism has an immense impact on the education of those identified on the spectrum. Despite these differing definitions of autism, both countries recognize autism as a disorder and have been working to find the best strategies to include these students within their general education classrooms.

Chapter 2

Methodology

Literature Review

In order to begin compiling potential classroom interventions and teacher strategies to use when teaching reading to students on the autism spectrum, I first elected to look through past research that both the U.S. and the U.K. had gathered. I collected information from a variety of sources, such as textbooks, journal articles, and websites. After gathering this research for one country, I then submitted an individual paper comparing and contrasting research strategies recommended by that country with what was actually begin employed by teachers within schools in that country. I then repeated this process for the other country. Once these individual papers had been completed, I next worked on merging the two countries' ideas together by comparing and contrasting what had been found in research in addition to what was actually occurring in classrooms and being implemented by teachers within both the U.S. and the U.K.

Informal Interviews

In order to gauge whether or not teachers were employing research-based strategies in their own classrooms, I decided to interview several teachers at two different schools in the U.K. and one school in the U.S. who had experience with students on the autism spectrum.

Bell (1999) defines two different types of interviews: formal and informal. I believe that my interviews fell somewhere in between these two types. Formal interviews are tightly structured, where the interviewer is essentially circling responses from a preplanned checklist. On the other hand, informal interviews rely much more on the person being interviewed. The conversation ebbs and flows based on

the responses given by the person being interviewed (Bell, 1999). My interviews had elements from both formal and informal interviews. On one side, I did have a list of specific questions to ask during my interviews. I was also looking for teachers to describe elements that I had discovered during my research, almost like the checklists used in formal interviews. Conversely, I did not let my interviews be completely governed by the list of questions I created. If a teacher started describing a particularly interesting resource or style of teaching, I would prompt them further using questions specific to what they were talking about. This method allowed me to easily compare teachers' responses to research while also creating opportunities to discover novel methods that I had not uncovered during my research.

Conducting interviews gave both myself and those being interviewed more freedom than structured approaches. Denscombs (2007) states that face-to-face interviews are an excellent source of gathering data because they allow the interviewer an opportunity to examine the emotions of whom they are interviewing. Not only was I able to discuss methods of teaching children on the autism spectrum, but I could also gauge teachers' opinions on those methods. In addition, Bell (1999) points out that interviews are adaptable and can change depending on who is interviewing and who is being interviewed. In my case, I was able to modify the interview based on what the teachers I was interviewing were saying. In fact, most of my interviews ended up continuing on longer than anticipated because the teachers I was interviewing would seek to tell me a story or some other anecdote. The teachers also had an answer for each of my questions, and I never walked away feeling as though I had missed out on some information. This higher response rate is a major advantage of utilizing face-to-face interviews (Denscombs, 2007). Lastly, these interviews allowed me to understand many of the real-world applications of methods described in research. These authentic accounts described situations in the classroom that I, and many other teachers, may never have encountered before (Denscombs, 2007). The stories teachers told illustrated how many methods described in research do not play out well for specific students, while others may be implemented without a problem.

Using interviews for my research had many advantages, but they did not come without at least a few disadvantages. First, interviews encounter many biases, both from the interviewer and from the person being interviewed. On the interviewer side, many researchers may be searching for specific answers and ignoring responses they do not wish to hear (Bell, 1999). In my particular research, I sought to combat this head-on. Although I was searching for teachers to describe specific resources and education methods that I had found during my research, I made sure never to address those methods directly during the interview until the end, when I would explicitly ask teachers what they thought of methods I found in my research. However, during the bulk of the interview, I would listen to the methods described by the teachers I was interviewing, even if those methods did not align with my research. Another problem I could have encountered is the validity of my interviews (Denscombs, 2007). Since I did not interview a wide pool of teachers from many different areas, my interviews may not be generalizable for the entire population. However, this study is only a first look at the comparisons between what research says to do and what teachers actually do. Further research in multiple types of school could reveal more information in the future. Despite these shortcomings, interviews were the best option for my research as they allowed me to easily compare research with what teachers employed in their classroom.

For my interviews, I questioned several teachers from an infant school and several teachers from a junior school in the United Kingdom. These two different schools allowed me to discuss strategies that might be used with students who are in both the younger and older elementary years. First, at the infant school, the teachers I interviewed were currently working with a student on the autism spectrum. Therefore, their ideas were innovative and mostly revolved around supporting that single student. Like the infant school, the junior school also had experience educating students on the autism spectrum, although they did not currently have any students on the spectrum at their school. In addition, I interviewed one teacher at a school in the United States. This teacher is the lead teacher in an autistic support room at her elementary school and worked with students across grade levels. Therefore, these interviews gave me a

wide range of information used by teachers to educate students on the autism spectrum and hopefully

improve their students' reading abilities.

Chapter 3

Autism Education in the United States

To begin, I will describe the extensive research that has been conducted in the U.S. into autism education. This research spans both reading education and education of students with autism in general, while also describing how to set up the classroom environment. Most of the strategies are generalized to work with any subject, but can be adapted to suit just reading instruction. Meanwhile, research on the physical environment is designed to create effective spaces for students with autism to focus and pay attention so that they can learn as much as possible.

Physical Environment

One of the first steps general educators can take is to organize the physical set-up of the classroom in a logical fashion. Areas for independent work, 1:1 instruction, small group work, and whole group discussion should be clearly defined. Using boundaries such as bookshelves can help immensely in achieving this goal. Large open areas can be confusing for students on the autism spectrum, as they may not understand what is supposed to happen there. Using boundaries can define these areas and serve as visual cues for what an area is to be used for (Stokes, 2008). These boundaries help establish a routine for students and allow them time to prepare for and predict what kind of instruction they will be receiving and learning they will be doing throughout the day.

On the topic of routines, posting the daily schedule and labeling it with how each subject will be taught (independent, 1:1, etc.) can be extremely beneficial for students with ASD. In addition to posting this schedule, teachers can also display visual prompts around the room. These prompts could be labels for where specific objects are located or prompts for expected behaviors. If students are able to read, the

classroom teacher can also post a written plan detailing the teacher and staff member's responsibilities while in the room. This plan can help direct students with autism to the proper staff member to talk to in a given situation. Lastly, the teacher can post a written behavior plan for the individual student at their independent work station as a reminder for what behaviors are expected of the student (Autism Classroom, 2012).

While creating displays in a classroom with students on the autism spectrum, keeping everything simple is key. Overstimulation can easily occur for students with an ASD potentially causing them to lose focus on lessons, get frustrated, or, in the worst-case scenarios, throw a tantrum. To minimize these distractions, teachers can take a multitude of steps. If possible, the classroom should be painted a consistent muted color. Visual clutter, such as art projects and classroom supplies, should be limited. If shelving is exposed, sheets can be used to cover the area. If the classroom difficulties are stemming from too much noise, the teacher can allow the student with ASD to use noise reduction headphones when appropriate (Stokes, 2008). Taking these steps can help create an environment where students on the autism spectrum are capable of being involved in the discussion rather than disengaged and distracted by the classroom around them.

Lastly, the most important pieces to remember when designing a classroom space are the students themselves. Every child with ASD is different. They will have different triggers and different personalities. The classroom environment should be decided based on the level of self-control that the child has, not his or her cognitive ability (Stokes, 2008). A student with ASD may be very high functioning but incapable of being around a lot of color. Another student may be low functioning but totally find in cluttered classrooms. The most important component for teachers to remember is to get to know their students. By knowing their students' preferences and dislikes, the general educator can create a positive environment for all students in the classroom.

Teaching Strategies

Beyond the physical environment, teachers must also adapt and modify their teaching to suit the needs of students with autism. The number of potential strategies for teachers to use is continuously growing as more research emerges. Since every student with ASD is different, teachers may have to experiment until they find a method that works in their classroom for their student. If one method does not work, the teachers can easily try another.

Some of the methods used for students with autism may already be used in the classroom to begin with. For example, incorporating special interests into activities can help students with ASD in their social engagement, emotional expression, and executive function (Myles, 2013). However, most teachers would probably agree that incorporating students' interests into the curriculum does help with engagement and motivation to learn.

To increase student confidence, teachers can use a strategy called priming. Here, the teacher familiarizes students with the schedule, activities, and materials for a lesson or lessons before their use. Not only does this increase the predictability of the school day for students with ASD, but it also helps to reduce anxiety and build confidence in the classroom (Myles, 2013). When students know what to expect during the school day, they will be more likely to feel confident about their learning. Lastly, teachers can also employ self-management strategies for students who are capable of handling them. Here, students monitor their own behaviors, helping them to self-initiate and regulate themselves. This method can help students advocate for themselves and gain independence (Myles, 2013). Self-management strategies can, therefore, also increase student confidence, which will help students become more engaged and motivated to learn.

Outside of these general strategies, teachers can take more concrete measures to ensure student success. One of the most common methods employed is social stories or narratives. These first person stories are written at the students' level to provide information about social situations (Myles, 2013).

These could be general situations, such as how to greet someone, or specific to the student, such as what happens when I throw a tantrum.

In terms of specific strategies to employ, teachers could use the Competent Learning Model (CLM) or the Accessible Literacy Learning (ALL) Curriculum. CLM works toward assisting educators in discovering what students need to learn, what reinforcers are effective for students, and how students should go about achieving what they need to know. This model follows the I do, we do, you do format, in which the teacher begins by modeling a procedure, then the group does that procedure along with the teacher, and finally finishes with the students completing the procedure on their own. However, this method also begins with one step instructions, and then gradually adds steps until the student can perform the entire sequence independently (Tucci, Hursh, & Laitinen, 2004). Overall, this method can work well when trying to work with students on relationship building and communicating effectively in social situations.

On the other hand, the ALL curriculum is designed around supporting reading instruction. This curriculum uses concrete methods and clear instruction to build component skills and create meaningful reading situations designed around student interests (Light and McNaughton, 2014). By utilizing student interests, the ALL curriculum motivates students while additionally teaching them how to read. The ALL curriculum could be particularly useful for low-functioning students in helping them to build up their reading abilities to a point where they could function within the general education classroom.

Along with the ALL curriculum, most research concerning students with ASDs in schools revolves around creating effective reading and literacy instruction. Along with priming and social stories, picture walks, visual maps, think-aloud, goal structure mapping, and emotional thermometers can also be incredibly helpful for students with ASD (Gately, 2008). These methods all revolve around breaking down stories into understandable pieces, which can be immensely helpful to students who struggle to comprehend reading and to understand the emotional impact of stories.

Outside of these methods, teachers can also turn to another subject area for inspiration: music. Using music along with reading can help students stay engaged with reading, thus helping their comprehension. Carnahan and Bailey conducted a study in the resource room of an elementary school to observe the impact of music on reading a story. They looked at the attention level and involvement of students over three situations: reading the story itself, reading the story with interactive pieces and reading the story with music. The researchers found that students appeared to be more engaged when the teacher used the interactive materials as well as music. However, their results were not consistent, as a few of the students had lower engagement when interactive books were used (2009). As this study shows, music may not always be effective. If music is deemed annoying or frustrating for a student with ASD, then other methods should be employed. As with many other areas of learning, music should only be used with students whom it is effective with.

Lastly, teachers can turn to the ever-growing realm of technology to help with reading instruction. Coleman-Martin, Heller, Cihak, and Irvine performed a study to explore word identification abilities of students on the autism spectrum if a computer program was used to assist students in learning challenging words. They observed three students using three different ways to learn the vocabulary: teacher-directed, both teacher and computer instruction, and computer instruction only. At the end of the study, the researchers found that the students were able to increase their vocabulary comprehension across all three domains but generally took the longest to understand the words presented when only being instructed by their teacher. After surveying the teachers and students, the researchers found that the teachers enjoyed the software because it allowed them to spend their time completing other tasks while still educating their students on the spectrum. However, the students were more divided. Only one student said she would use the software again, with the other two saying they were unsure. In conclusion, the researchers determined that computer instruction could be beneficial because of its easy access and efficient use of time (2005). While students should still have some form of teacher instruction, using technology can help students augment this learning. In addition, further research has revealed that many students with autism prefer

when information is presented electronically. They find it more motivating, and it can help them to learn the information more quickly (Myles, 2013). As technology becomes a larger and larger component of every day society, students with ASD should be exposed to it, especially when it can be used to help them learn.

Chapter 4

Autism Education in the United Kingdom

To begin, I will briefly explain the ideas that researchers in United Kingdom has about designing the physical environment for students on the autism spectrum. In addition, I will explain the multiple teaching strategies that research in the U.K. has discovered to be effective for students with autism.

Physical Environment

Unlike the U.S., most research in the U.K. focuses on teacher strategies to be used in the classroom as opposed to specific classroom layouts or designs. Instead, the U.K. focuses on the classroom environment much more generally, although they still do recognize its importance (Monroe, 2010). In the classroom, if teachers can keep a positive attitude around their students on the autism spectrum, more positive developments in reading will begin to appear. Therefore, teachers should focus more on keeping spirits and attitudes uplifted while working with students on the autism spectrum than laboring over designing a specific classroom layout to suit their students. In order to achieve this, teachers can look to a wide range of research on potential strategies to use with students on the spectrum in their classrooms.

Teaching Strategies

In terms of reading, children on the autism spectrum are generally below average in U.K. schools (Jones et al., 2009). However, most of them do quite well at some pieces of reading while struggling with

other pieces. First, many students on the autism spectrum have high decoding skills and word recognition abilities but struggle with reading comprehension (Davidson and Weismer, 2014, Ricketts et al., 2013). Although students with autism are able to read, they struggle to understand what they are actually reading. One possible explanation for this lack of comprehension could be the social communication impairments that those with autism often experience (Ricketts et al., 2013). In correlation with the above, students on the autism spectrum also often excel at letter identification and understand the mechanical aspects of reading but struggle with understanding the purposes of reading (Lanter, 2009). These difficulties with comprehension and purpose can be improved using a variety of methods in the classroom.

Akin and MacKinney (2004) outline a variety of methods that teachers can use in their classroom to teach reading to students on the autism spectrum. First, they recommend using related readings, or stories that have something in common with one another. Along those same lines, teachers can also read the same story multiple times or find the story in multiple formats, such as videos, audiobooks, magazines and toys. Colasent and Griffith (1998) support the use of these repeated exposures. In their study, they found that students were better at recalling what was read if they were exposed to the story multiple times. Students on the spectrum can grasp the main ideas of a particular type of story through these repeated exposures. In addition to these methods, teachers can also use peer tutoring and music therapy (Akin and MacKinney, 2004). Here, students learn from their peers and from songs to discover meaning in the texts. Akin and MacKinney (2004) also recommend that teachers follow an activity schedule with pictures and words as well as scaffold their instruction. With scaffolding, teachers ask specific questions to elicit responses from students and then gradually pull away until students are asking the questions and answering them on their own. Hower (2014) found that both teachers and researchers agreed that scaffolding was effective with students on the autism spectrum. Lastly, Akin and MacKinney (2004) recommend using social stories. In these stories, a problem behavior or situation is illustrated. Then, the appropriate response to that behavior or situation is explicitly presented. In some ways, these stories "kill

two birds with one stone." Students learn about finding meaning in text while also learning appropriate behaviors.

To help with reading comprehension, Hower (2014) recommends using graphic organizers, as they were successful in the classroom. These organizers allow students to categorize their thoughts and break down characters' personalities to promote a better understanding of their purpose and emotions.

With reading, many researchers recommend embracing the use of technology. Since many students on the autism spectrum have a preference for visual learning over auditory learning, videos and pictures online can be highly beneficial (Akin and MacKinney, 2004, Tjus and Heimann, 2000). In addition, Travers (2011) found in his research that students given computer-assisted were just as successful as their teacher-instructed peers. The students using computers also had a positive attitude to learning and were highly engaged throughout. But computers are not the only way to use technology. McGrath (2013) recommends utilizing applications for tablets to help students. She points out that these tablets are generally much less expensive than other assistive technology devices. Many of these applications can help with scheduling, although audiobooks and other reading applications are also available. In a world dominated by technology, exposing students on the autism spectrum to that available technology may not only prepare them for the real world, but also improve their reading abilities.

However, traditional print materials should not be forgotten. Koppenhaver and Erickson (2003) found that simply exposing students to various print materials increased students' interests in reading and writing. In addition, students learned about the various uses and text and their importance.

In addition to these methods, several specific programs have been used to educate students on the autism spectrum. First, TEACHC (Treatment and Education of Autistic and Communication-Handicapped Children) has been used to help with reading education. TEACHC involves creating an individual program for each student and using structured teaching and behavior therapy in a structured environment (Baron-Cohen, 2008). In reading, students would consistently follow the same routine and be asked the same questions until they were able to lead themselves through the reading exercise.

Another program is intensive interaction. This program involves the teacher and student working one-on-one. In this program, however, the teacher follows the student's lead in reading while analyzing their behaviors to check for understanding. Then the teacher gives feedback to move the student forward in their learning (Nind, 2000). This method creates a relationship between teacher and student and may make the student more comfortable expressing themselves and their shortcomings in reading.

Overall, there are almost a countless number of methods to employ. For example, if students have eye problems, colored-overlays on pages can be used (Sicile-Kira, 2003). However, the majority of the research recommends that teachers steer away from the basic sight-word instruction often taught in classrooms (Alberto et al., 2013) and move toward more comprehension activities for students on the autism spectrum. In addition, speech and language therapists should work together to create effective plans to propel students forward (Wall, 2004). Through collaboration and the implementation of many reading strategies, teachers should be able to help their students with autism learn to read fluently and with comprehension.

Chapter 5

Comparing and Contrasting the United States and the United Kingdom

In total, both the U.S. and the U.K. have a wealth of research on educating students on the autism spectrum. Despite coming from different countries, both countries share many of the ideas on teaching reading to students on the autism spectrum. To begin, I will compare strategies that the teachers I interviewed shared with me. Then, I will conclude by comparing and contrasting all the strategies that both research and teachers in classrooms advocated.

Teacher Anecdotes on Physical Environment

Much like my research suggested, the teacher I interviewed in the U.S. had much more to say about the physical set-up of the classroom than any of the teachers in the U.K. did. To start, the teacher in the U.S. described how she sets up her classroom in clearly defined areas. Using small wall dividers and bookshelves, she has specific areas for small group work and individual desks for independent work. She says that these well-defined areas help establish a routine for her students, something that often greatly helps students with autism. In addition, this teacher described her therapy room, which she deems to be the most crucial piece of her classroom. However, she was quick to note that a therapy room would not be feasible in a general education classroom. So, she recommended finding a place for students to take a sensory break in.

Meanwhile, in the U.K, the junior school did have a separate classroom for students with learning disabilities to visit at various points throughout the day. This classroom acted as their therapy room. When students needed a break from their general education classroom, they could travel here to calm down or receive support from other teachers in the room. Conversely, the infant school did not have a

separate room for students with learning disabilities to go to. In addition, they also did not have a therapy room. To combat this, the teachers set aside a specific area within the classroom for their current student on the autism spectrum to work and call his own. Regardless of whether or not a therapy room was available, teachers still worked to create a space for students on the spectrum to use as a place to calm down.

Teacher Anecdotes on Strategies for Students with ASD

After these discussions on physical environment, the conversation became much more detailed when discussing the teaching strategies employed in schools both in the U.S. and the U.K. Although some of these schools employed similar methods to what I found in my research, many of the strategies used to educate students on the autism spectrum were different.

First, at the infant school, the teachers I interviewed were currently working with a student on the autism spectrum. Therefore, their ideas were innovative and mostly revolved around supporting that single student. First, the infant school used a schedule program with their students on the autism spectrum. This schedule featured index cards with Velcro. Each card had a specific activity written and a picture relating to it. Students on the spectrum would pull these cards down throughout the day and put them on a paper that described what they were doing now and what activity they would complete next. This scheduling was recommended in my research, but this specific schedule unlocked a whole new piece of learning that my research did not discuss. With students labeling what they were doing now and what they would do next, students on the autism spectrum were also learning chronology and transition words. While using simple words like 'now' and 'next', students were exposed to words that they will more than likely encounter again in text. Now, these students were learning to understand these words, which will help them in their future reading.

Also at the infant school, one student on the spectrum had been in love with labeling. To pull the student's interests into reading, something that several sources of research had mentioned, teachers allowed the student to label things in the classroom as well as labeling items themselves. Here, the student could practice his writing while also having physical objects labeled. This labeling could help improve students' sight vocabulary as well as making potentially unclear words clearly as they are explicitly labeled. In keeping with students' interests, this school also picked reading selections based on what their students like. For example, if a student enjoys building with blocks, the teachers would select a book related to building. This piques their child's interests and makes him or her want to read. Along those same lines, teachers also found activities that their students on the spectrum could complete with classmates they enjoyed spending time with. This peer tutoring, which was recommended by my research, allowed students on the spectrum the opportunity to model what their classmate is doing and learn new reading strategies.

On the other hand, in the U.S., the teacher I interviewed utilized the ALL curriculum to find student interest and then use them in reading tasks. In addition, this teacher also uses this curriculum in particular with students who are nonverbal or have complex communication needs. She complimented the program on its fact pace which helps to keep students engaged and prevents them from falling off task. She also likes how the lessons are broken down into small sections to be completed in multiple sessions throughout one day.

In addition to the ALL curriculum, the teacher in the U.S. also used CLM. As she describes it, CLM is a way to get children to be a willing participant in their learning. In her classroom, this teacher and her support team use CLM to form a relationship between an adult and a student in the classroom. The adults work with students individually until a relationship builds up, and the student forms a bond with that adult. This bond gives students a teacher to go to for help, assistance, and support as they are learning. Much like this model, students on the autism spectrum in the junior school each had a learning mentor. However, this mentor was mainly a source of support. Instead of educating the student, they

would talk about what the student was struggling with and develop possible solutions with the student. Their primary role was to give the students a support structure to turn to when they got discouraged. Conversely, students on the autism spectrum at the infant school were often also accompanied by a one-on-one aide, who was usually a teaching assistant in the classroom. When completing activities, the student on the spectrum would work with this aide. This one-on-one instruction closely followed the layout of intensive instruction from my research. Unlike intensive instruction, however, the aide would occasionally take over the lesson and model what to do if the student did not understand the task or if the task was novel to the student. Teachers in both the U.S. and the U.K. worked to find mentors for students on the autism spectrum, although these mentors would oscillate between being solely for support, solely for academic purposes, or pieces of both.

Much like the modeling of the one-on-one aide in the infant school, the teacher in the U.S. recommended modeling enthusiastically. This teacher uses modeling consistently in her classroom. She scaffolds this modeling by moving from I do, to we do, to you do. First, she completes some procedure, then the students work together to complete the same type of procedure and, finally, the students complete the situation on their own. This modeling helps increase student confidence, which in turn makes students want to learn.

On the opposite end of the spectrum, none of the teachers I interviewed utilized music in their classrooms. As the study described above, music may not always be effective. As the teacher in the U.S. explained, she does not incorporate music into reading instruction because one of her students finds music to be incredibly distracting. He will get frustrated when music is playing, and he is trying to learn. Therefore, music would be an ineffective tool for them to use with their student. In the infant school, their student was easily distracted by loud noises, which means music would also not be a smart choice to use when teaching reading to this student.

The rest of the methods teachers used at schools in both the U.S. and the U.K. differed from one another. In reading education, the junior school generally used methods for dyslexic students for students

on the autism spectrum. First, they tried to make reading multisensory. For students just beginning to read, they would use wooden, foam and colored letters that their students could feel and manipulate. At the next stage, students on the spectrum would create their own bendy letters with pipe cleaners or Wiki Stix. None of my research referenced doing anything like this method, but, without a good grasp of the alphabet, reading words is nearly impossible. So, especially for beginning readers, this practice had proven to be effective. Once students had a solid grasp of the alphabet, they would move on to reading stories. Conversely, the teacher in the U.S. used only strategies that she had discovered that were directly related to and had been researched to be effective with students on the autism spectrum.

In terms of technology, students on the autism spectrum at the junior school often used computer programs to build their sight vocabulary and read stories. One of the most popular games involved "bombing" selected words to create sentences. According to one of the teachers I interviewed, students loved playing the computer games and often did not even realize that they were learning. During my discussions with the teacher in the U.S., she never once mentioned using technology except as a study break for students. Along those same lines, the teachers and the infant school in the U.K. used computers as a break time for their student on the spectrum.

Both the junior school and the elementary school also utilized social stories. For individual students, they would make a book to target a behavior that that specific students needed to improve upon. These books would be created with pictures of the student themselves to give it even more personal meaning. With these social stories, students could not only learn correct behavior but also start to discover why text is important. The infant school, however, was not using these books, mainly because many of the students they taught were unable to read at that time.

Also unlike the infant school, the junior school and elementary school used mind mapping and graphic organizers, which were mentioned in my research. These organization techniques helped make reading more visually explicit for students as well as giving students the opportunity to chart their own

ideas of the stories they were reading. These graphic organizers would then be used to discuss the story and gage student's comprehension.

Lastly, the teacher in the U.S. recommending phrasing questions so that students get the right answer the first time. Again, this strategy aims to increase student confidence. Many students on the autism spectrum grow used to failure and think they will fail every time. Providing them with opportunities to be successful is key to getting them interested in learning. Conversely, in the U.K., at both the infant and junior school, if students on the spectrum were unable to answer a question as it was originally worded, the teacher would step in and scaffold or model what to do for students. Then, when encountering the question again, the teacher would hope the student would be able to work out the answer from the previous models demonstrated by the teacher.

In all, educators in both the U.K. and the U.S. have a wealth of resources and research available to them to utilize if they are educating a student on the autism spectrum. With these resources, most teachers that I interviewed tried out many strategies until they found the few that stuck and seemed to work for the student with autism in front of them. Lastly, in both countries, teachers in the general classroom and teachers in the learning support room worked together to create the most effective program for students on the spectrum.

Similarities and Differences

To start, both the U.S. and the U.K advocate using graphic organizers with students on the autism spectrum to break down stories into understandable parts. Along those same lines, the U.S. and U.K. both recommend using social stories and narratives to illustrate to students' appropriate behaviors in both school and society. Both of these methods would help students understand the purpose and meaning behind stories, which aims to improve their comprehension of stories. In addition to these, however, the

U.K. also emphasized using related readings, multiple readings, and multiple formats of the same story. These recommendations could also be useful in helping students understand the main idea behind a story.

On a more specific scale, both the U.S. and the U.K. implement multiple specific curricula to assist students in their reading. In the U.K., teachers use TEACHC, which involves them repeating the same information until students are able to respond correctly to that information. Conversely, some teachers in the U.S. use the ALL curriculum, which is fast paced and keeps moving and adapting to students needs. These two curricula show contrasting viewpoints on teaching reading to students. However, not all the curricula between the U.S. and the U.K. are completely different. In fact, Intensive Interaction in the U.K. and CLM in the U.S. have quite similar end goals. Both are used to find a mentor for students on the autism spectrum to rely on, learn with, and lean on when they need support, amongst other goals as well. In addition to this similarity, all the curricula used in both the U.S. and the U.K. are employed with individual or small groups of students as they are deemed necessary.

When implementing anything in a classroom with students on the autism spectrum, educators in the U.K. recommend scaffolding instruction. This scaffolding is remarkably similar to the "I do, we do, you do" modeling that occurs in the U.S. This scaffolding and modeling is designed to help students reach success when learning a new reading concept. They both involve the teacher gradually giving more control of a situation over to the class after beginning with total control over the situation. However, in the U.S., all research recommended using the teacher as the leader in these situations. In the U.K, conversely, peer tutoring is recommended. These peers could prove to be appropriate models for students on the autism spectrum, and could teach them new information they need to know in order to read effectively. In the end, the goals of both scaffolding and modeling are to help students find success and the ability to complete a task successfully.

On the technology front, both the U.S. and the U.K. recommend incorporating technology in the classroom, especially given the prevalence of technology in today's society. However, scholars in the U.S. appear to just be beginning to research the effectiveness of technology instruction on reading for

students with autism. Meanwhile, educators in the U.K. have more detailed plans for incorporating technology into reading instruction already designed. Whatever the difference there, both places still currently recommend using technology in addition to traditional print resources.

Along with technology, scholars in both the U.S. and the U.K. are researching the effects of music on reading instruction for students on the autism spectrum. Currently, educators in both countries have found music to be effective for students on the autism spectrum while they are reading. However, as Ms. Lantz pointed out, the implementation of music truly depends upon student preferences. If students find music distracting or upsetting, then using it in the classroom during reading instruction would be inappropriate. However, if students enjoy and are motivated by music, then schools in both the U.S. and the U.K. would find ways to incorporate it into the classroom during reading instruction.

Lastly, both scholars in the U.S. and the U.K. have some recommendations for the classroom environment. However, research in the U.K. mostly focuses on keeping the classroom environment positive and encouraging for students on the autism spectrum. Meanwhile, scholars in the U.S. have done extensive research on how to set-up the most positive environments for students on the autism spectrum. While this research does discuss teacher attitudes, most of it focuses on the actual, physical set-up of the classroom. As an example, some schools in the U.S. use a therapy rooms, separate from the learning support rooms, for students to take breaks in throughout the school day. Conversely, the learning support rooms in U.K. schools are the rooms used for students to take breaks throughout the school day. Despite these differences, at the end of the day, the main goal is, again, to set-up the classroom and respond to situations in ways that will encourage and support students on the autism spectrum instead of distracting them from their learning.

In the end, both countries share one main common theme: doing what is best for the student. Both the U.S. and the U.K. have multiple sources of research recommending individualized plans for students on the autism spectrum revolving around students' personal interests within the curriculum in tandem with what students need to learn to succeed in their reading.

Chapter 6

Conclusion

Overall, teachers have many options available to them if they need to adapt their classroom and their teaching to fit the needs of students on the autism spectrum. When students with ASD are included in the classroom, they have the opportunity to be engaged with their socially competent peers, an experience that is invaluable for students who struggle to fit in socially on their own (Boyd, Conroy, Asmus, McKenney, & Mancil, 2008). Although it may be difficult for teachers to find time to make the adaptations necessary, through working closely with autistic support teachers, general educators can create incredibly supportive and positive learning environments for students on the autism spectrum.

On a personal level, the connection to autism with my brother has constantly inspired me to become the best educator I can for students of all needs. By setting up my classroom using some of the methods described, I can create a positive working environment for my students with ASD. By using a multitude of different teaching strategies, I can help students with ASD learn as much as they possibly can. With inclusion continuing to look like the way forward for special education, keeping myself informed on how to best to educate students with special learning needs is crucial to helping all students succeed and reach their full potential.

My research in this paper is only the beginning. Since I only interviewed a handful of teachers and did not have the opportunity to interview city schools or privatized schools, more research could be done on methods used in those areas. Additionally, I only compared and contrasted two English-speaking countries. More exploration into countries with differing language and education systems could reveal innovative or new results. Lastly, every case of autism is different and may require different methods for reading instruction. Teachers should make instructional decisions based on the needs of the students in

their class, and not every student will need or want the same interventions. Regardless of these shortcomings, this essay exhibits the importance of assisting those on the autism spectrum in their reading education. Almost every piece of life requires reading, and, without the ability to do so means falling behind and never fully becoming a part of the working world. Students on the autism spectrum need support from their teachers, so that they may learn to read and become fully functioning members of society.

Appendix A

Interview Questions (United Kingdom)

Below are the questions asked to educators and teaching assistants in the schools I visited.

1. Do you have experience educating children on the autism spectrum?

2a. If yes, what methods and resources did you use to teach those students?

2b. If no, were you to have a student in your classroom with autism, what methods and resources

do you think you would use to teach that student?

3. Are there any specific methods and resources that you use when teaching reading?

4. What do you think about using pictures/mind mapping/technology to teach reading to

children with autism?

Appendix B

Interview Questions (United States)

1. What, in terms of the physical layout of the room, do you recommend or find the most important for the success of your students?

2. What resources and strategies do you recommend and use with your students on the autism spectrum?

3. Are there any strategies specific to reading that you use with your students on the autism spectrum?

4. Is there anything you wish general educators would do with students on the autism spectrum that you do not currently see happening in most schools?

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EDUCATION

The Pennsylvania State University   University Park, PA

Bachelor of Science in Childhood and Early Adolescent Education   Date of Graduation: May 2015

Minor: Special Education

Chosen as one of 50 Penn State University Elementary Education majors to participate in a collaborative 185 day, full time elementary student teaching internship in a K-4th grade setting in the State College Area School District (Pennsylvania). This nationally recognized program received the 2011 Spirit of Partnership Award and the 2009 Award for Exemplary Professional Development School Achievement from the National Association for Professional Development Schools (NAPDS), the 2004 Holmes Partnership Award for the best partnership between a university and a school district, and the 2002 Distinguished Program in Teacher Education Award from the Association of Teacher Educators (ATE).

PROFESSIONAL EXPERIENCE

Professional Development School Intern   August 2014-June 2015

- Second Grade, Park Forest Elementary School, State College, PA
- Planned for and implemented lessons in all subject areas for 18 second grade students in a self-contained classroom.
    - Taught language arts through a Daily 5 setting, leading stations in guided reading and spelling activities in addition to writing lessons for pen pals.
    - Developed math lessons using the *Math Expressions* program to help students conceptually understand math in order to perform basic mathematic skills proficiently

- o Engaged students in science using an inquiry process.
  - o Educated students in social studies using multiple perspectives and viewpoints.
  - o Incorporated technology into lessons through the use of iPads and projection screens.
- Aligned lesson plans with state standards across all subject areas.
- Differentiated instruction in an inclusive environment to meet the needs of a diverse group of students within the classroom.
- Assessed students using both formative and summative methods to inform and adapt instruction.
- Cooperated as a team with mentor teacher, paraprofessionals, guest substitute teachers, support staff, specials teachers, other students teachers, and other teachers in the primary division.
- Attended and actively participated in weekly division meetings, faculty meetings, in-service days, parent-student-teacher goal setting conferences, and training workshops.
- Assisted with science and social studies instruction in a third grade partner classroom on a weekly basis.
- Conducted an inquiry investigation on modifying my own practice to encourage the following of directions and engagement with lessons.

Special Education Minor Placement   Fall 2013

- Life Skills Classroom, State College Area High School, State College, PA
- Planned for and implemented lessons teaching necessary life skills in both one-on-one and whole class settings.
- Differentiated instruction to fit the unique needs of each individual student
- Collaborated and team-taught with fellow placement member.
- Assessed students through both formative and summative means to inform and adapt instruction.
- Assisted and collaborated with lead teacher and paraprofessionals to guide students through daily routines and expectations.
- Accompanied and encouraged students during periods outside their regular classroom.

RELATED EXPERIENCES

Daycare Aide   Summer 2012, Summer 2014

- Ephrata Church of the Brethren Children's Center (ECOBCC), Ephrata, PA
- Monitored and engaged with children grades K-5 during daily activities.
- Planned for and implemented lessons in physical education, creativity and history.
- Supervised small group of children during twice weekly trips to local swimming pool and weekly field trips to local destinations.
- Collaborated with teachers and other aides to coordinate and carry out planned activities.

Study Abroad   Spring 2014

- University of Chichester, Bognor Regis, U.K.
- Participated in classes designed for British education majors.
- Collaborated with fellow education majors to complete projects in preschool education, social studies and creativity.
- Observed lessons across grade levels in varying types of schools (public, Church of England, etc.).

- Assisted teachers with activities and lessons across subject areas.
- Conducted research and interviews for Schreyer Honors College Thesis on Autism and reading education.
- Gained cultural awareness of similarities and differences between countries, even those that speak the same language.

Adopt-A-School President   2014-2015

- The Pennsylvania State University, University Park, PA
- Lead biweekly meetings with assistance from fellow officers.
- Implemented pen pal exchange between club members and student teaching placement.
- Communicated with local library and school district to set-up volunteer opportunities for members.
- Collaborated with club officers, club members, local library administrators, my mentor teacher, and club adviser to implement volunteer and other activities.

Tutoring   2012-2013

- Volunteers in Public Schools, State College Area School District, State College, PA
- Worked with two ESL students once a week to improve their English speaking and writing skills.
- Assisted with completing homework practicing extra writing activities.
- Played spelling and word-based games with students for further practice with English.
- Communicated with parents on their children's progress after each session.

HONORS AND ACTIVITIES

- Schreyer Honors College (August 2011-present)
- Dean's List (8/9 semesters)
- President's Freshman Award for 4.0 GPA
- Pitt/PSU Global Studies Undergraduate Research Symposium (April 2015)
  - Presented thesis to fellow undergraduate researchers at University of Pittsburgh
- Penn State Dance Marathon (THON)
  - Largest student run philanthropy in the world
  - Rules and Regulations Committee Member (2011-2013)
    - Assisted with keeping events before THON weekend safe
    - Assisted in keeping THON weekend safe and secure for all involved
  - Adopt-A-School THON Chair (2012-2013)
    - Organized canning and fundraising trips to raise money for pediatric cancer research
    - Interacted with THON family on a regular basis to maintain a positive personal relationship
- Phi Eta Sigma National Honor Society
- National Society of Collegiate Scholars
- National Science Teachers Association
- National Council for the Social Studies
- Attended the 92nd Annual Pennsylvania State Association for Health, Physical Education, Recreation and Dance (PSAHPERD) State Convention (November 2013)